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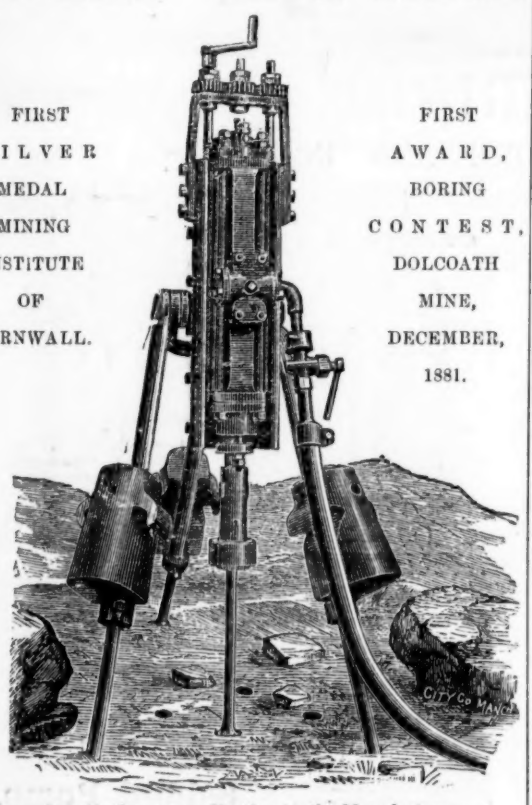

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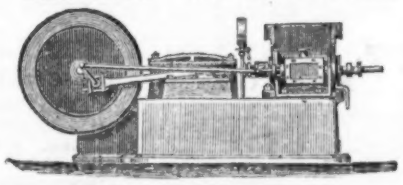

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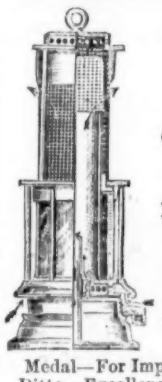

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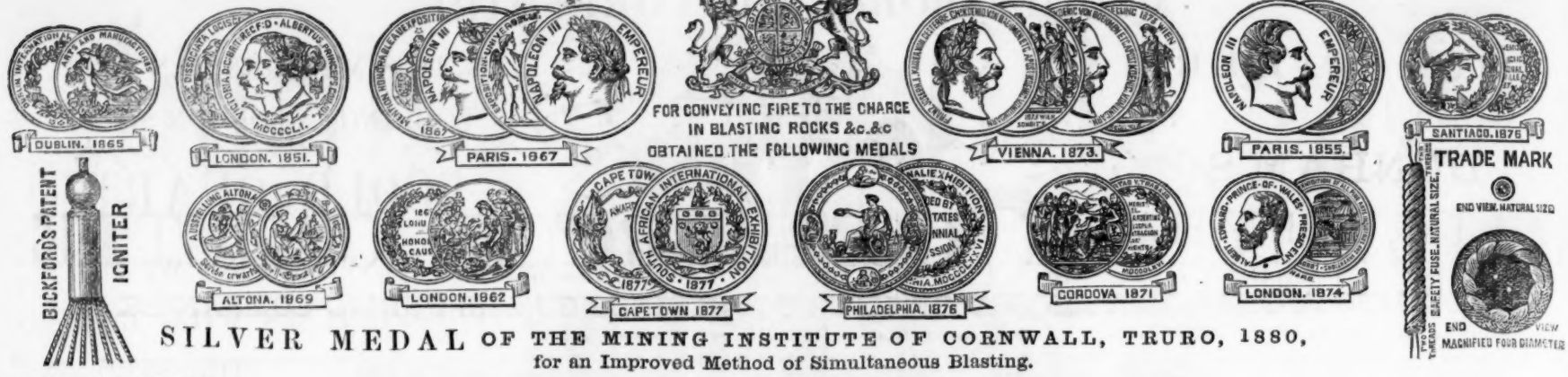

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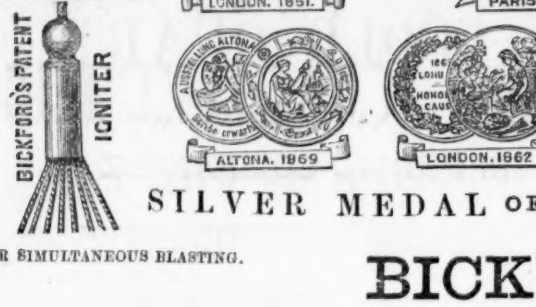

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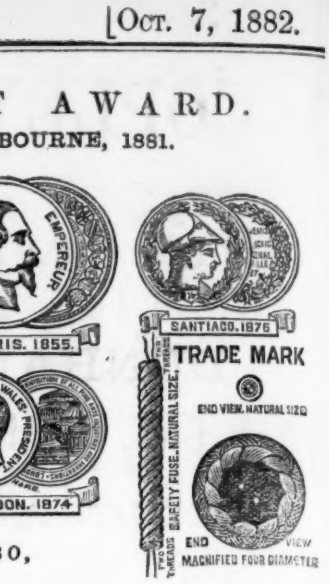

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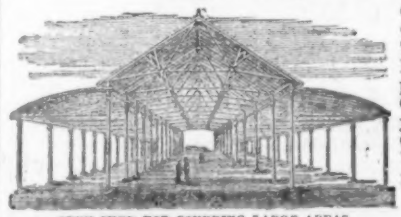

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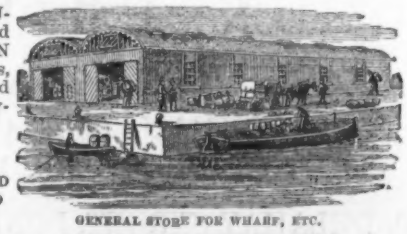

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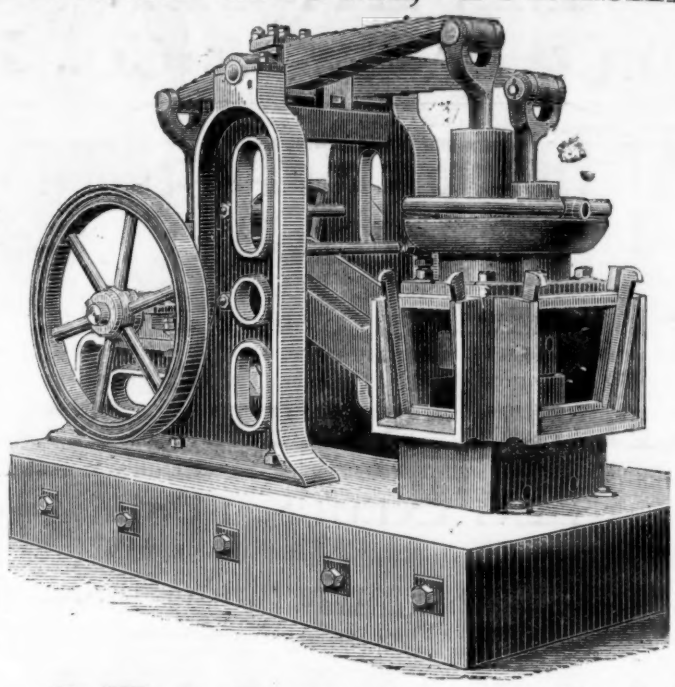

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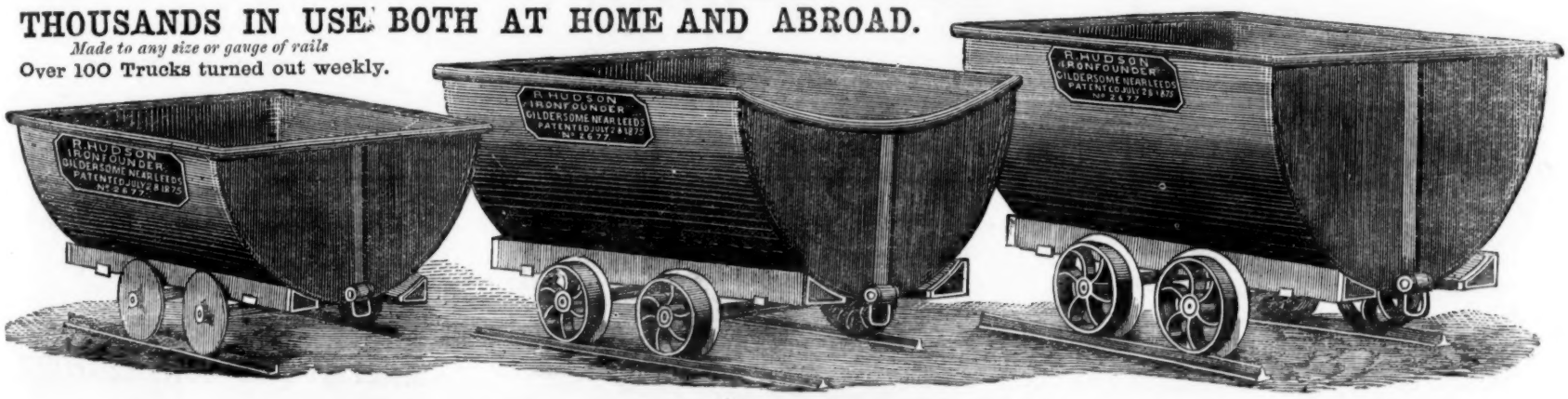

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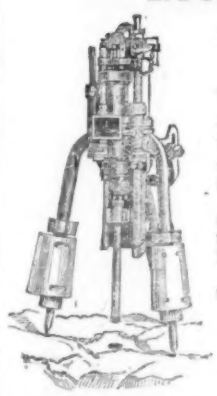

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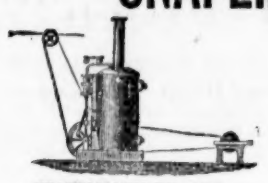
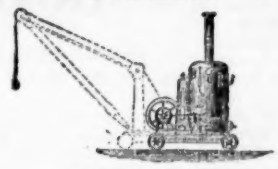


STATIONARY ENGINE. No Building required.



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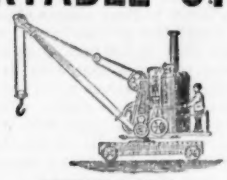

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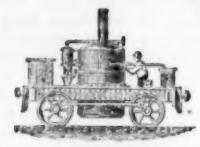

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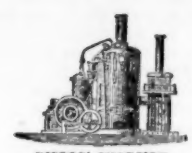

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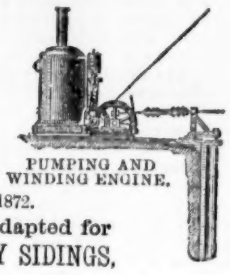

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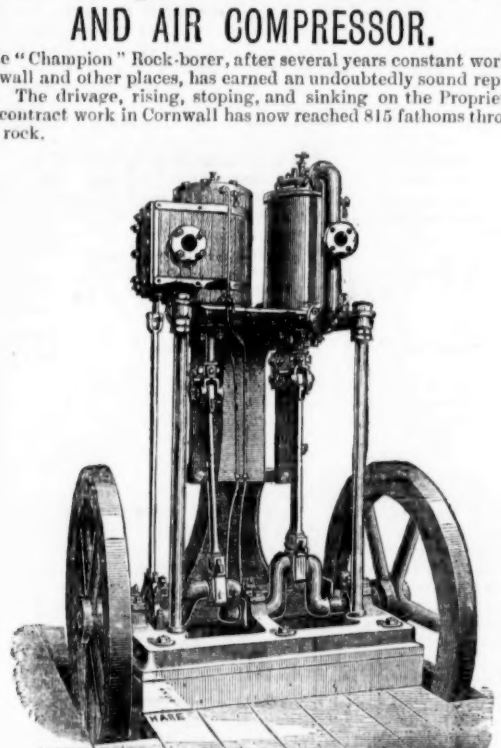

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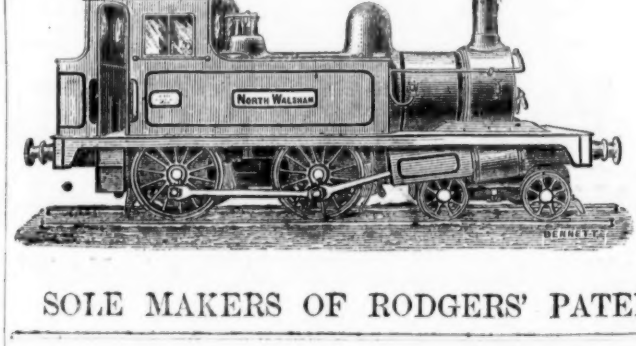

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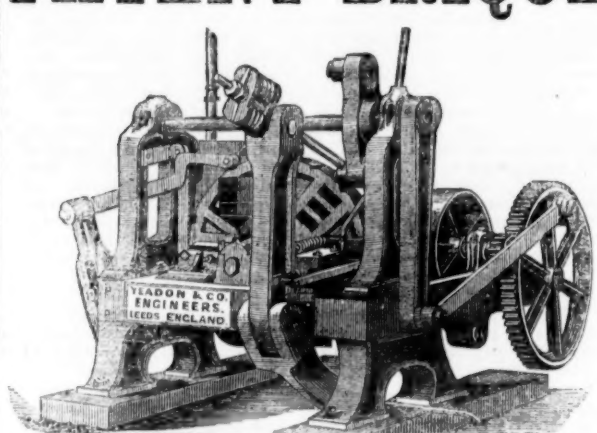

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TESTIMONIALS

Messrs. Yeadon and Co., Leeds HARBONNAGE DE BERNISSART, PRES PERUWELZ (BELGIUM), JANUARY 4TH, 1878.
I continue to be **perfectly satisfied** with the work performed by the two patent Briquette Machines as well as with that of the Steam Engine, Mixer, &c., which you supplied a few months ago for the manufacture of compressed slack Briquettes, and that I can recommend them as being the **best machines** I know of, after having carefully studied **all the Briquette Machines** constructed at home and abroad. G. FAGES, General Manager.

SOCIETE DES CHARBONNAGES REUNIS DU RIEU DU CŒUR ET DE LA BOULE. QUAREGNON (BELGIUM), SEPEEMBER 13TH, 1879.
Messrs. Yeadon and Co., Leeds.
We are **entirely satisfied** with the erection and working of the two Briquette Machines, as well as the Steam Engine and Mixing Apparatus. A. FRANEAU, Managing Director.

Messrs. Yeadon and Co., Leeds. CHARBONNAGE DE BERNISSART, PRES PERUWELZ, JANUARY 24TH, 1879
I continue to be highly satisfied with the Briquette Machines which you supplied in 1877. They do their work very well, and produce the Briquettes very regularly, and of a good quality. G. FAGES, General Manager.

Messrs. Yeadon and Co. SOCIETE HOUILLERE DE VENDIN-LEZ-BETHUNE, PAS-DE-CALAIS, DECEMBER 2ND, 1880.
I have the honour to inform you that the Briquette Machines **work very well.** The Briquettes are **very well made.** I am highly satisfied with your workmen, who have done their work very well. SYLVA CATTIER, General Manager.

The undersigned, Civil Engineer of Mines, Chevalier of the Legion of Honor, Consulting Engineer fo the Mines de Vendin-lezto, Bethune, Pas-de-Calais, certifies that the Briquette Machinery for making Briquettes of Coal, supplied by Messrs. Yeadon and Co. to the above Company **is working to their entire satisfaction.** E. LISBET.
Lille, December 28, 1880.

British and Foreign Safety Fuse Company,

REDRUTH, CORNWALL,

MANUFACTURERS OF

SAFETY FUSE,

FOR MINING AND QUARRYING PURPOSES.

PRICES ON APPLICATION

Original Correspondence.

THE GOLD AND DIAMOND MINES OF SOUTH AFRICA.

Sir,—There is great excitement here with regard to the spread of small-pox throughout the colony, and I am afraid we are doomed to have it here, as a case is reported to have broken out on board the mail-coach from Cape Town to this place. The sanitary inspector has gone out to meet the coach with a view to placing the passengers in quarantine. There have been so many fatal cases here from the result of vaccination that many persons say vaccination is worse than small-pox. The Great Central Mining Company (Kimberley) has just held their ninth quarterly meeting, which although satisfactory in many respects has caused a large amount of dissatisfaction amongst many of the shareholders. The British is doing as well as ever, and is the favourite diamond mining company on these fields. The Barnato are finding remarkably well, and are earning their usual dividend. The Standard Company are also doing well. The French are not doing much beyond hauling reef. The prospects of the Rose Innis Company are improving, and so are the South-East Company. In the smaller mines there is no improvement. All business appears to be at a standstill, and there are very few here now who do not acknowledge our company system to be a failure. I repeat, as I have so often done, the mines are really good, and only want to be in the hands of honest men and to be conducted on honest principles to be an unqualified success.

In the Transvaal the canteen keepers are still doing their best to induce persons to search for gold. The Honourable (!) Messrs. Joubert and Pretorius, members of the commission appointed by Government to inspect and report on the new gold fields have returned to Pretoria. They think very little of the prospects of the new diggings. They say—"Gold is certainly found over a large area, but the finds are not in proportion to the amount of work done. Digging there is like a lottery. So far as could be ascertained, about 100 out of the 200 diggers have found gold; 25 of these have found sufficient to cover expenses, while four or five may perhaps have made a little profit. The rest seem to find little or nothing." Your readers will observe how fully the above official account agrees with the accounts I have sent you from the first. The commission have appointed a J.P. for the so-called diggings, with power to act as Gold Commissioner, should occasion require. He will have the right to issue prospecting licenses at 10s. per month, such license to cover a claim of 50 yards square. Many are already leaving the fields, with a promise to return if it improves. I must once more caution persons who are otherwise employed against going to those fields. The Volksstem, after cautioning persons against going to the fields, refers to the commissioners' report, and winds up thus:—"The above fully agrees with what we have heard from others who had just returned from the Kaap. They declare the stories of the finds of from ½ oz. to 3 ozs. per day by all diggers a gross falsehood, and point to the fact that a white man, himself the owner of a claim, hired himself and Kaffir at a total of 4s. 6d. per day to another, as a proof that digging there does not pay as yet."

It turns out to be a fact that the new survey ordered by the Transvaal Government has cut off all the gold bearing portion of Mr. Gwyne Owen's farm Lisbon, and that the gold claims are now owned by Mr. Walker, the surveyor, and Mr. Hudson, the British resident. The action of the British resident in the Transvaal is causing great dissatisfaction amongst all true Englishmen. The following is a fair sample of the opinions generally entertained respecting him. Under the bold heading of—"The British Resident in the Transvaal," a correspondent thus addresses the Editor of the Advertiser:—"Sir,—Surely the statement contained in the following extract from the Transvaal Advertiser, published in your issue of Saturday, requires some explanation. There is some dispute about the boundary line of Owen's farm, Waterfall. The inspectors say that the line will cut the greater portion of rich claims out of Owen's property. The adjoining farm belongs to a company, of which the British Resident is one. Mr. Erskine went to Pretoria post haste to see Mr. Hudson, and intends buying him out, so report says. It is currently reported that the British Resident has strong Boer proclivities, and his recent attitude in the Mankoroane-Massouw embroglio, somewhat strengthens this. And if he is engaged in land speculations and transactions of a kindred nature it is not difficult to understand his countenancing Boer aggression, and ratifying the pretensions to the lands of native chiefs beyond the Transvaal Border by so-called volunteers, who are more aptly designated by Sir Hercules Robinson as brigands, and their conduct as being scandalous, and brings disgrace upon the European name in South Africa."

The Cape Times says Mr. D. Benjamin has arranged with all the diggers at Pilgrim's Rest, their claims having been satisfied at an outlay of 50,000*l*. But a letter I received from one of the diggers yesterday says—"This place is awfully quiet; most will leave as soon as Benjamin pays the awards He was to have paid by August, but sufficient funds did not come to Pretoria, so he was obliged to ask for another month, which was granted." The principal portion of those who have left our diamond mines for the gold fields are low, impecunious, grog-shanty loafers whom we can very well spare, and the benefit of whose absence is already felt in some of the lowest haunts of Kimberley.

Kimberley, Sept. 6. ——— Correspondent.

AMERICAN, INDIAN, AND AFRICAN MINING SPECULATIONS.

Sir,—The impracticability of disposing of many of the Anglo-American, Anglo-Indian, and Anglo-African mine shares when the British capitalist has once secured possession of them in return for his hard cash has now become proverbial, and too many have ascertained to their cost that the frantic subscriptions—"capital asked for subscribed three times over"—and premiums quoted when new concerns are put forward, are due to what in anything but share-dealing would be regarded as something more than business trickery, and might even come before the courts of law as conspiracy. But unfortunately the questionable practice is not confined to foreign mining schemes; it is carried out to even a greater extent with respect to home mines, and in the latter case the capitalists are the more helpless, because in most cases the absence of any formally advertised prospectus makes it more difficult to fix those connected with the conspiracy. The process is at once simple and effective. The holder of a mining right—which it may be taken for granted is of extremely small value—decides to form a company, and if he be in the right financial channel, or can obtain the necessary introduction to the wire-pullers in the London world of finance—and of whom there are, probably, not more than a score—the thing is done. It corresponds with the case of the French courtier—"Madam, if it be possible it is done already; if it be impossible it shall be done immediately." For in truth the value of the property to be sold forms no factor in the calculation.

Sometimes, no doubt, the conspiracy system of floating companies is quite justifiable with regard to a certain class of capitalists, for, as the Financial and Mining News of New York says, "people who grumble about the unreliability of mining stocks are themselves to blame. Take nine-tenths of the speculators and they do not want a mine, they want a quick moving gamble. Who the superintendent is does not have any weight with them, it is who is working the deal but if these same people make a losing instead of the winning they contemplated, they grumble about the mines having no merit. If the money that has been expended in honest mining were placed in one column, and the product in another the odds would be heavily in favour of the latter. If to this second column were added all the thieving of the men who handle the amalgam and those who sell the bullion and keep the books it would add 25 per cent. to the profits. The people who decry gold and silver mining so much if they read a little would find that the people of the Southern States have lost $500,000,000 (we get the item from the Atlanta Constitution) in ten years through a series of speculations in which cotton occupies the first place. No mining interest can show such a deficit.

This is quite true. The loss does not result from the worthlessness of the mines in every case, but from those who manipulate the funds. It must be borne in mind, however, that although speculating capitalists are grasping, and the men at the mines may be dishonest, the men who really bring mining into disrepute are the middlemen-vendors, and their agents, the company-makers. Were a mine worth 20,000*l*. purchased by the middleman for that sum, and resold to the company for 25,000*l*., which is 25 per cent. profit, the public would not object, and the cost of advertising, prospectus, and of other necessary preliminary outlay, would be fairly charged to the company. But under the present system such a mine would be sold to the company for perhaps 120,000*l*. or more, and the only bait offered to the public is that the promoters pay the preliminary expenses—perhaps 1000*l*. But it will be asked, how are the public induced to buy at six times the value? Because they have no voice in the matter. The vendors, promoters, and wire-pullers form a neat little conspiracy among themselves, and "syndicate the thing." All who "stand in" promise to take their share of the whole nominal capital—which may be called in this case 150,000*l*.—according to the number of verdant (?) speculative capitalists which each hopes to control. The members of the syndicate say little to their clients about the value of the mine, but much more about the probability of a rise in the shares. It will have been seen that as 120,000*l*. goes to the syndicate for purchase-money 30,000*l*. secures a float with flying colours, and if anything approaching the 30,000*l*. seems to be coming in from clients, then nominees of the syndicate—clerks, office boys, or hangers-on of any kind—apply for perhaps 1,500,000*l*. worth of the stock, it being well understood that none will be allotted to them. It can then be with truth (?) announced that the capital asked for has been subscribed ten times over—in the case of the Potosi it was stated to have been subscribed twelve times over—and the shares acquire a *bona fide* premium in the market for a sufficient time to enable the syndicate to plant their shares and pocket the proceeds.

I do not hesitate to say that every American mine which has been sold to the British public during the last 15 years could have been purchased on the spot for one-tenth the amount the British companies have paid for them, and that it is this which gives Anglo-American mining such a bad name. A report now come from New York says that at the beginning of September the rumour was current in London that "an effort is making to establish a London Mining Board to facilitate the dealings in English, American, East Indian, and African mining stocks. Baron Grant is said to be the chief backer of the scheme." However this may be, a well-conducted Mining Board in London would be a most useful and probably a very profitable institution. At present the transactions in mining shares are conducted by brokers on their own responsibility, and there is a consequent absence of the safeguards which are necessary to make the business as safe and as trustworthy as the business in other classes of investment securities. I heard nothing of the rumour myself, and can only say that if any one of the men who have been connected with Anglo-American mining schemes be connected with it there will be no increased confidence resulting from it. Those Americans who talk loudest and longest in London are precisely those who would be least trusted on the other side of the Atlantic, although in London they move in good society. Veritas.

City, Oct. 4.

THE GOLD MINES OF THE WYNAAD.

Sir,—If you should agree with me that the time has arrived for plain speaking with respect to these mines, you will allow me space for this letter. I have paid dearly for my experience, and would urge those of your readers who have invested in these speculations to take warning in time. When the celebrated Asshcton Smith was at the height of his fame as M.F. and a daring cross-country rider, an incident occurred which is very suggestive in this connection. In the ardour of the chase Mr. Smith leapt his horse into a hollow lane, from which he found it impossible to escape; he lay perfectly quiet until presently another sportsman fell into the same trap, who instantly began to holloa for help at the top of his voice. "Lie still, you fool" said the candid but experienced M.F. "Don't you know, if you keep your own counsel we shall have the lane full by-and-bye; then we can creep out on other folks backs." It is to be feared the concessionaires, directors, brokers, and other original shareholders concerned in floating Indian gold mines have been following the sagacious advice of the hunting squire. It would be a curious and instructive statement, could the truth be got at, which would show the value of shares held by chairmen and directors of these speculative companies when they were first started, and the value so held now. If the parties alluded to have found no gold, they have proved the sterling quality of the 1*l*. share. True fissure veins have been struck very deep down in that direction. We are told by the prophets, who are never tired of preaching patience, the gold-bearing quartz gets richer as the vein goes deeper. There is something ominous in the way in which promoters dived at once to the lower strata of investors at home, while managers in India, with exquisite *savoir faire*, contrived for so long only to scratch about on the surface at the mines. It is evident the extraordinary vitality of these companies, in spite of disaster after disaster, warning after warning, can only be accounted for in the manner I suggest. The shares are now almost wholly held by numerous small investors, who hope on against hope, determined to win or lose all, or by dealers who, having profited by the losses of the larger shareholders, can now operate for a rise, or wait the chances of the market.

Take the instance of the Indian Consolidated, which is being most assiduously puffed, with its enormous nominal capital. Its true history would be instructive reading for those who still believe in the *bona fides* of Indian gold mining companies. Another, the Trevelyan, boasted a year ago they should be the first in the race to commence crushing operations in earnest. They redeemed their boast; they did crush, and what was the result? I quote from the directors' printed statement:—"Computed quantity of quartz passed through the batteries, 150 tons; yield of retorted gold, 1 oz. 1 dwt. 6 grs." That report was issued six months ago, and yet after the late fearful monsoon they are beginning again *de novo*. The last published balance-sheet of this company shows the purchase price of the property to be 100,188*l*. 6s. 5d., and the expenditure to end of 1881, 12,249*l*. 13s. 1d. more. Expenses would, of course, be increased by the time the *ridiculus mus* was brought forth; but setting aside that consideration, we have 112,437*l*. 19s. 6d. sunk to get 1 oz. 1 dwt. 6 grs. of gold. In round figures, 113,000*l*. put down to take up 4*l*. Who but 1*l*. per share investors could stand such a collapse as this? The Trevelyan prospectus, issued in 1879, gives the estimate of an expert "as high as 8 to 10 ozs. of gold per ton of quartz" on their estate. Of course, even Indian gold mine directors could not stand such a crushing blow as this was. But instead of the concern being wound-up, millwork was abandoned, and prospecting re-commenced—113,000*l*. paid away before a small estate of 900 acres had even been thoroughly prospected. The recently published report of the manager states he has "very strong hopes;" the shaft they are now sinking "will ultimately prove a productive and valuable centre of extensive mining operations." Mark the number of adjectives! The literature of Indian gold mining is in itself a curious study. From the first no manager could indite an intelligible telegram, and throughout the whole business there has been the same flighty propensity to deal with words instead of facts—a pottle of sack to a manchet of bread.: 150,000*l*., or thereabouts, is a large sum to pay for the "very strong hopes" of one interested official. But supposing his hopes realised, does any competent man of business believe out of that one shaft the 150,000*l*. is ever going to be re-couped?

It is the Glenrock crushing that is now being anxiously waited for; it has been waited for for the past 12 months; there have been delays and rehersals. When the curtain rises in good earnest we shall see what we shall see. But after the telegram announcing some weeks ago a most successful commencement, which had the effect of "bulling" the shares, it is disappointing to read in the manager's report, now to hand, they are still "going to commence." If the Glenrock crushing demonstrates a success, there must be a complete reversal of the current of Indian gold mining affairs, for there have been, first and last, some five or six other crushings by other companies, which have either ended in complete disaster or a dull discounting of the first bright promises. It is ominous that this report mentions "100 tons of poor boulder stone" to be put through first; it is so like the course of the disaster at Trevelyan. And then the dramatic locking up of the batteries. "How fearful it is to cast one's eyes" into an empty box. When we are doing a good stroke of business we are not so gingerly inclined as to opening our ledgers and bank books. Yet the suspense should not be prolonged, for on referring to the Glenrock prospectus I see they calculated on crushing 100 tons per day, so that the 500 tons will not take longer than a week. We ought to be out of our misery the day after to-morrow. But granting all that, we fear yet hope for when this Pandora's box at the Indian Glenrock mill shall have been at last unlocked; it must be a sanguine man who would expect more than 1 oz. of gold to the ton of crushed quartz in it. On that favourable assumption is it not worth while further to consider—1. Will 1 oz. to the ton be a paying result looking to the enormous capital outlay and the constant heavy expenses?—2. Is not the climate of the Wynaad alone fatal to all calculations based on crushing so many tons per day? Not one prospectus made any allowance for the monsoon, yet it represents a waste of six months out of the 12 as a fixed quantity, with a further unknown quantity, including destruction of roads and bridges, foundering of adits, filling up of shafts by floods, and landslips occasioned by deluging rains. J. S.

THE EL DORADO OF SIR WALTER RALEIGH.

Sir,—In the *Mining Journal* of Sept. 16 there appears another letter from Mr. Alex. Del Mar, wherein he writes—"It will perhaps surprise those whose attention has not been especially called to the subject to learn that Brazil has produced as much gold as either California or Australia." He then goes on to say—"From the beginning to the end the process was panning." If Mr. Del Mar's statement is correct—and I have no reason to doubt it—your readers may well be surprised, inasmuch as to wash out nearly 200,000,000*l*. sterling worth of gold, nearly the whole of which comes from the upper course of the Rio de San Francisco, with nothing but small wooden pans is perfectly incomprehensible to modern gold miners, and in my opinion points to the veritable El Dorado of which Sir Walter Raleigh was in search. Persons may very naturally consider this idea a strange one when they consider only that Sir Walter confined his operations to an exploration of the banks of the River Orinoco. But this in my opinion is where that great man was at fault. It must not be forgotten that all the information obtained by Sir Walter Raleigh with regard to the El Dorado was second-hand, and consequently he had no reliable data to go upon.

The first account of this wonderful place was communicated by an old Indian to Gonzalo Pizarro when he was exploring the upper portion of the Amazon, in Peru, and it is very evident from the trouble and anxiety displayed by the Spaniards in exploring between the Amazon and Orinoco that they believed El Dorado (the golden country) was between these two rivers; but up to the present no such place has been found there. Now, had Sir Walter Raleigh devoted his attention to the south bank of the Amazon instead of the north, had he in fact explored from the Amazon to the River San Francisco he would have found both on the right and left banks of the latter river places answering exactly to the description given by the old Indian to Gonzalo Pizarro—viz., "where gold and precious stones were to be had in abundance merely for picking up." There is only one place in the whole of South America which answers to the above description, and this is the upper portion of the River San Francisco. In some of the affluents of this river diamonds have been found in such large quantities that the Government of Portugal were compelled to place heavy restrictions on the persons who searched for them in order to maintain their value; and in the neighbourhood of one of the affluents of the upper portion of the river—embracing Sabara and Ouro Preto—gold has been found in larger quantities than in any other spot on our globe for a corresponding area. In fact there is not wanting at the present day evidences of the almost fabulous richness of this locality, inasmuch as the St. John del Rey (an English company) have carried on the only actual mining in that country, must have sent to market considerably over 30 tons of the precious metal, and have given a profit to the shareholders of 1,600,000*l*.

In my opinion everything points to this locality as being the veritable El Dorado which lured Sir Walter Raleigh from his home; but in consequence of the geographical inaccuracies of the person who imparted the information, both English and Spaniards failed to discover. What those inaccuracies were is difficult to determine, but I can easily conceive an old Indian on the River Madeira (the upper portion of the Amazon) in Peru being a little confused in his geography when referring to particular localities on the banks of two rivers equidistant from the great Amazon. It is a very interesting subject, and I should like to see some thoroughly competent person fully investigate the matter. In fact a person of Mr. A. Del Mar's undoubted ability might while resident in Brazil—if he could spare the time—be able to determine the position of El Dorado.

London, Oct. 3. ——— An Old Gold Miner.

GOLD AMALGAMATION—THE READWIN SECRET?

Sir,—In connection with the recent controversy between Messrs. Crookes and Readwin, the article on the reduction of silver ores by the Californian method in Mexico by Prof. H. Richter, published some five years since in the Zeitschrift für Berg- Hütten- und Salinenwesen, will not be uninteresting. It is stated that the ores raised at the Tajo Mine, at Rosario, near Mazatlan, are essentially mixtures of quartz with argentic sulphide, and probably some silver and gold, together with some galena brown blende and pyritic minerals; the average contents of silver being 40 ozs., and of gold 2¾ ozs. per ton, with from 6 to 8 per cent. of lead and zinc. The reduction is effected by the American method of pan amalgamation without previous roasting. The ore is partially divided, by hand-picking, into rich and poor classes, without, however, attempting to remove any of the lead or zinc minerals, which are passed by a mill of 20 stamper-heads with rotating lifters weighing 7 cwts. and making 60 9 in. strokes per minute, through grates having apertures ¼ in. in diameter, 24 tons being stamped daily. The slimes pass first into a pit 3·3 ft. deep and 9·8 ft. in cross section, where the richer material forming the normal ore for the pans is deposited, after which a second collection of poorer stuff is made in a second pit of the same size, and finally the waste, together with that from the pans, is passed through a series of catch-pits 9·8 ft. long, 5 ft. broad, and 3·3 ft. deep. The reduction of the richer slimes is effected in pan amalgamators of the improved Varney pattern, which perform the three operations of grinding the particles of ore to impalpable mud, mixing the particles with the chloridizing agent, and reducing and amalgamating the silver minerals. The pan is essentially a mill, with cast-iron instead of stone grinding surfaces, which is adopted partly from economy and partly from the property possessed by iron of reducing the mercurial chlorides. These surfaces are put together in segments, so as to be easily renewable, as they are worn out in 40 days when worked at 70 revolutions per minute. The charge of the pans is 800 lbs. of orestuff from the stamps, which is mixed into a thin mud by adding water and running the pan for half an hour until the materials are sufficiently ground. During this period a jet of steam is introduced, in order to warm up the contents to 170° Fahr. Chloridising and reducing agents are then added in the following proportions:—Sulphate of copper, 4 lbs.; salt, 40 lbs.; and mercury, from 70 to 90 lbs., including ½ lb. of zinc amalgam, or about 13 times as much salt and 32 times as much mercury as is used in the Mexican or "patio" process of amalgamation. The copper salt is added in somewhat larger quantity than would be required for the chlorination of the whole of the silver, assuming it to be effected by cupric chloride.

The reactions are considered by the author to be substantially the same as those in the "patio" process, and as probably occurring in the following order:—Amalgamation of metallic silver and gold; conversion of cupric sulphate into chloride; conversion of silver sulphide by cupric chloride, with the formation of cuprous chloride, into silver chloride; reduction and amalgamation of the latter by metallic mercury; and, finally, decomposition of the mercurial chlorides formed by the iron of the pan. The zinc amalgam is said to help by the production of electric currents. Like the Mexican process, the method is not well suited for the treatment of minerals containing lead, zinc, or antimony, the working of such ores being attended with a considerable loss of silver and mercury. The amalgamation pro-

cess proper requires about four hours, the progress of the operation being controlled by washing out samples of the mud at intervals, and observing the colour and form of the mercury globule obtained, which should be gray and "tail," and assume an oval form. The finished charge from the pan is received in a cylindrical washing vat or settler, and allowed to rest for an hour, whereby the bulk of the mercury and amalgam separate from the mud and fall to the bottom. Afterwards the lighter particles are removed through a hole in the side by a stream of water, which flows for 50 minutes; lastly, the bulk of the mercury is separated from the remaining heavy mud charged with ore by drawing it from a lower opening for ten minutes. As the amalgam is very poor, owing to the large quantity of mercury used, only the excess of the latter introduced at each washing above a large fixed amount is removed in clearing the settler, the whole quantity being only removed at intervals of eight days.

The waste or tailings of the first operation, consisting largely of heavy metallic sulphides, with probably some silver sulphide, and containing about 35 per cent. of the original amount of silver, are reworked in four large pans or "tailing mills," which take charges of double the weight of those worked in the ore pans, but are otherwise similarly arranged. An assay of this material gave 28 ozs. of silver per ton, and appeared by vanning to consist of 9-10ths of quartz and 1-10th of heavy sulphides, pyrites, blende, and galena. The reagents used per 1-600th lb. charge are—salt 40 lbs., sulphate of copper 5½ lbs., and mercury 120 lbs., the latter being about 70 times the weight of the silver in the ore. The working of the tailings, both in the pans and settlers, is exactly similar to that in the ore mills. The waste from the last washing, containing about 1 oz. to the ton, is passed through a catch-pit before being allowed to run to waste. A further quantity of 20 per cent. of silver is recovered by the second operation, showing the final loss to be about 15 per cent. of that contained in the ore. Allowing four hours for the filling of the tailing tanks, the extraction of the silver from the ore, counting from the first charging of the ore-pan, is effected in 16 hours. The amalgam collected is treated at intervals by filtration through canvas, after which it is washed in quantities of a few cwts. at a time in a pan with water to clear it from mechanical impurities, filtered a second time, and finally heated in retorts holding 1200 lbs. The time required for distillation is from eight to fifteen hours, on account of the great variability in its composition. The sponge silver for the retorts is melted in blacklead crucibles holding 50 lbs., and run into bars.

The great advantages of the pan process, as compared with other metallurgical operations—speed and cheapness of work, together with large production from a small plant, are, in the author's opinion, obtained by a considerable waste of silver, which he calculates at 18·7 per cent. of the total quantity, and as due to the effect of the lead and zinc ore. Nearly the whole of the gold is, however, saved. The loss of mercury is 2 lbs. per 2000 lbs. of ore treated, or 80 per cent. of the weight of the silver. The staff required is very small. With 12 workmen of all descriptions about 17 tons of ore are treated per day. The machinery is driven by steam-power, the cost of wood for two engines being about 8*l.* daily. The total cost of working, including wages, materials, wear of machinery, &c., is about 2*l.* per ton of ore treated, or about 1s. 2d. of silver recovered. Readers of the *Mining Journal* will scarcely require to be reminded that Prof. Richter has a world-wide reputation as a scientific metallurgist, and that he is the editor of the recent issues of Plattner's work, so that his authority will not be questioned.—*London, Oct.* 4. H.

FRONTINO AND BOLIVIA GOLD MINING COMPANY.

Sir,—Having been a shareholder in this company since 1870, and having attended all the meetings of recent years, I am probably one of the "Aged Pilgrims" referred to in Mr. Sutherland's letter, published in the Journal of Aug. 12. Although I must say that I for one am by no means indifferent upon the question of receiving dividends—indeed, on the contrary, I have been for a long time anxiously looking for the quarterlies so frequently promised. A pause having occurred in the recent correspondence, a fitting opportunity presents itself to an attentive reader for forming a pretty clear idea of what it all comes to. In one of the earlier letters (Journal, July 15) a hope is expressed that the time might come when the shareholders who elected not to have a dividend declared would explain their reasons for so acting. I have not seen any reply made to this by any shareholder, but I believe that nothing would be easier than to give it, and my view is this—for years the mines were carried on in a hand-to-mouth style, and the stores and appliances were bought at exorbitant prices on the spot as they were wanted. In recent years the stores and appliances have been sent from England at English prices, effecting a considerable saving, but involving a large stock of stores at the mines—a stock in transit—and the requisite money in hand to buy the stock for the succeeding shipment, the shipments having, in fact, to be made months before the goods are wanted for use. If any of the money standing on the accounts to the credit of profit and loss had been made applicable to a dividend, this economical arrangement would have had to be stopped, and this would undoubtedly have been the effect had the suggested 3s. dividend been declared.

The contention raised that the money borrowed to pay for the acquired properties was borrowed prematurely and in excess of the requirements was pretty well disposed of by the Chairman's statement of the dates and amounts of the raisings of money and the payments thereout (Journal, Aug. 12); but it certainly does appear undoubted that 5000*l.* was raised in October, when there was only 4300*l.* to pay. Still, as only 1200*l.* was borrowed in December, when payments of 2000*l.* were impending, it after all comes to this, that 6200*l.* being borrowed in two instalments at an interval of 2½ months, a portion to the extent of 700*l.* was borrowed 2½ months before it was wanted to be paid away. This I should regard as a mere matter of detail at which anyone who had not such detail to arrange should not cavil. There was a sort of attempt to argue that part of the money was borrowed six months too soon, because the money borrowed appeared in one half-year's account, and the payment of part of it in the next. It has been explained that such payments were due on Jan. 2, and that the money was borrowed on Dec. 31 in readiness for them; and as the balance-sheet was struck on the night of Dec. 31, the interval of only three days between the borrowing and the payments had the effect of throwing the transaction partly into one half-year's account and partly into the next. I do not think that this is fairly treated when it is spoken of (Journal, Aug. 19) as borrowing 6000*l.* in the half-year ending December, 1881, "whilst the fact remains that in that half-year not more than 2700*l.* could possibly be required."

Reviewing the whole correspondence, it appears to me that Mr. Seal was fairly entitled to a more explicit answer than had been published to his enquiry for the actual names of the companies of which the Cordoba and Garibaldi properties were purchased, and that the shareholders generally were entitled to some further information as to the actual money paid for the properties, a doubt having been expressed in one of the letters as to what such amount might really have been.

I, therefore, took upon myself to address to the secretary a letter, which, omitting for brevity's sake the formal heading, was as follows:—

J. Jameson Truran, Esq. Sept. 19, 1882.

As a shareholder in the Frontino and Bolivia Company, I have read with attention the numerous letters which have lately appeared in the mining papers. In the letters of Mr. Seal he has asked very pointedly for the names of the parties of whom the Cordoba and Garibaldi properties were purchased. The reply has been that they were acquired from "two small Columbian properties." This statement elicited from Mr. Seal an enquiry for the names of such companies; to this no reply has been published, but it seems to me that he is fairly entitled to have a definite answer to his question I shall, therefore, be obliged if you will, in answer to this letter, let me know the names of the companies in question in order that I may make such use of the information as I may deem necessary.

In a letter from Mr. Sutherland, which appeared in the *Mining Journal* of Aug. 12, he urges that the circumstances of money having been borrowed for the purpose of paying for these properties before the sanction of the shareholders had been obtained to their purchase "raises a grave doubt whether all or only a portion of the 8000*l.* had been paid *bona fide* for these properties." For myself, I can quite understand that in order not to lose the opportunity, it was necessary to agree to purchase and even to pay before any authority could be obtained from England; and I fail to see why the course which was adopted should raise any doubt as to the particular price which had to be paid, but whether a reasonable inference or not, a serious charge has thus been hazarded—that although the company has paid 8000*l.* for the properties, it is doubtful whether the vendors have received sums amounting together to that money. I think, therefore, that it is incumbent on the board to take some notice of this insinuation, and possibly to require of Mr. Sutherland either a statement of the grounds on which he made it, and to whom he imputes having pocketed any part of the 8000*l.*, or else an admission that he had no grounds beyond his own imagination.—Richard Donagan.

To this letter I received the following reply:—

Richard Donagan, Esq. Sept. 27, 1882.

I have shown your letter of Sept. 19 to the directors of this company, and they desire me to enclose you a copy of a letter from Mr. Seal to them on the subject to which your letter refers, and of the reply sent to Mr. Seal. Looking to the tenor of the letters which Mr. Seal has published in the *Mining Journal*, the directors are surprised that Mr. Seal has omitted to publish these last two communications. The directors informed the shareholders at the last general meeting that the price paid to the vendors of the Cordoba Mine was 4800*l.*, and to the vendors of the Garibaldi Mine, 3200*l.*—J. Jameson Truran.

Enclosed in this letter were copies of a letter from Mr. Seal to the secretary, and a letter from the secretary to Mr. Seal, which were as follows:—

J. Jameson Truran, Esq. Sept. 1, 1882.

Will you be good enough to furnish me with the names and addresses of the parties from whom our company purchased the Corboda and Garibaldi Mines. I should be glad to have the particulars by the bearer.—S. Seal.

S. Seal, Esq. Sept. 9, 1882.

I have submitted to the board your communication of Sept. 1, asking for the names and addresses of the parties from whom the Frontino and Bolivia Company purchased the Cordoba and Garibaldi Mines. The Cordoba Mine was purchased from a local company established in Columbia, called the Cordoba Mining Association, and the Garibaldi Mine from another local company, called the Garibaldi Mining Association. The directors do not know the names and addresses of the shareholders in these associations, as neither they nor any agent of the Frontino and Bolivia Gold Mining Company (Limited) had any interest in them either as shareholders or otherwise.—J. Jameson Truran.

It appears from the above that the information I was seeking to obtain had been already furnished to Mr. Seal; and by publishing the correspondence you, Sir, will enable other shareholders to have the same information. I conclude that the latter part of the secretary's letter to me is intended to convey a denial of Mr. Sutherland's imputation that some part of the 8000*l.* paid for the Cordoba and Garibaldi properties may not have reached the hands of the selling companies.

Let us now all hope that our immediate experience may be dividends! Dividends! with quarterly "pilgrimages" to the bankers to cash the quarterly warrants. The most aged of the Pilgrims will want no better staff on such journeys than the as yet too unfamiliar pieces of blue paper filled in for good round sums.

Richard Donagan.

Alexandra-road, South Hampstead, Oct. 3.

BRITISH MINING ENTERPRISE IN CALIFORNIA.

Sir,—I have been prospecting a good deal around this section of the country. The mining interests in the district are reviving. Mr. Chalmers, of the Stella Mine, who recently returned from London is now erecting machinery, and is enlarging the capacity of the mill. He is to commence sinking the winze, the bottom of which was in rich ore when work was suspended, so I think if Mr. Chalmers and Mr. Jones, his foreman, have the same luck in discovering ore when depth is attained as they had in the upper levels the stockholders will have some handsome dividends in the near future. The Alpine Mining Company and several other mines are working a small force of men. The Orion, which was purchased by Stockton capitalists a few months ago, has developed some splendid ore. They had a ledge some 50 ft. from the surface that would mill $12. Now they are down about 140 ft., and the ledge has widened out to 25 ft., and will average $100 to the ton. The purchasers have not expended $2000 in developing the mine up to the present, and now they can congratulate themselves on having a valuable property that will pay large dividends. The Blaine Mine is another valuable property lying idle for want of capital to erect a mill. This claim has free milling ore 50 ft. from surface that will mill $15 to the ton, and where it was sunk a little in the tunnel the ore was almost as rich again, and no doubt if sunk deeper would develope ore as rich as the Orion. The ore could be extracted and milled for a few dollars per ton, as there is plenty of water on the ground to run mill free of expense, also plenty of wood, only expense of cutting it. The General Stoneman is in the same predicament as the Blaine, awaiting capital to develope it. This mine has a well defined ledge, free gold that gives assays of $15 to the ton, and could also be worked for a few dollars per ton. The stockholders of the Colorado No. 2 held a meeting a few days ago to try and arrange matters so as to start the mine up. This mine has produced a good deal of bullion, and has still plenty of good ore to be seen. The Wood business is in full blast again, as they are about making some large contracts for the ensuing year.—*Markleeville, Sept.* 12. James Curtain.

SAN PEDRO (CHILI) MINING COMPANY.

Sir,—You are probably aware from the reports which at rare intervals appear in the Journal that there is in existence an enterprise known as the San Pedro (Chili) Copper Mining Company, but beyond this it can scarcely be supposed that anyone outside of the unfortunate shareholders in the concern, troubles himself as to whether the Chili bars that are quoted in the metal market are the production of the San Pedro, San Antonio, or other property owned by this company or not. I myself, notwithstanding that I am a shareholder, could not say with certainty whether the production of our mine affects the market for copper, inasmuch as the information afforded to the shareholders is of such a description as it would be rash to base any opinion upon. I believe, however, it is a fact that we do not produce much copper, but we have a phenomenal capacity for absorbing the nobler metal, and it appears to be much the same thing as far as, judging by their equanimity, the officers of the company are concerned. Nothing seems to disturb their serenity, and no apology is offered when a call is made, notwithstanding that favourable news was long ago anticipated. It is not, however, equally satisfactory to those who find the sinews of war, and now when the whole amount payable on the shares has been called up, and we find ourselves in very much the same position as we were in—minus some shekels of gold—when we embarked on this speculation, it really behoves us to take a look around and make a thorough investigation into the manner in which we have been served by those we have placed at the head of our undertaking. It is not an affair about which we shareholders need feel any compunction, for we have hitherto exhibited unparalleled patience, and have placed the most childlike faith in those at the head of affairs. It, however, will be downright imbecility if we do not now stir ourselves in the matter. I for one have determined that as far as I am able I will insist upon knowing how my money has been spent, and from all I can gather this is also the determination of other shareholders. Mind I do not for one moment impugn the conduct of any of the officers of the company. They are no doubt all honourable men. Whether they are such men as we should have entrusted our concern to—looking at it from a business point of view—is however quite another thing. Take for instance the directorate. Here we find gentlemen of unimpeachable character willing for a consideration to devote a certain length of time to attend a board meeting now and then. What is the result? Beneficial? Well, hardly from our point of view, whatever it may be from the directors. I need hardly say that I am not a director. I wish I were, for I should then share in the sum set apart for their arduous duties, and I should have an opportunity, which is of more consequence, of seeing what our position really is. However I am entitled as a shareholder to the same information, and I insist on getting it.

What is the use of the London office with its expensive paraphernalia? What information have the directors to afford us? Why at the last meeting a question was raised as to the position of the manto, and all the information that we could get was that afforded by a pen and ink sketch which one of the directors kindly drew, and which he imagined might represent a section of the mine judging by what he had been able to gather from the written reports sent by the captain. Can it be conceived that no proper drawings have ever been sent to enlighten us. Now we want to know, you know. We want first and foremost to know where all the money has gone to. We want proper accounts, such accounts as will show the expenditure, and not such as are sent out when the calls are made, and which are perfectly useless. The expenditure has been going on for years almost now, and many thousands of pounds have been sunk. Whether we shall ever see any of it back again is a question. But in any case we want the satisfaction of knowing what has been done with it. We know the result, and now want to know how it has been arrived at. I believe it was Captain Lean that estimated the cost of opening up the mine. Let him now explain how it is that, notwithstanding his estimate has been exceeded to a vast extent, we are as far off any profit as ever.

Another thing we want to know is when the statutory meeting is to be held. It is surely time that we had notice of this, for it seems a considerable time since our last happy meeting. If we can get no satisfactory information of our concern at once it appears to me obvious that the only thing to be done is to call the shareholders together and elaborate some plan for putting matters on a proper footing. The most necessary step will be the dispatching of some thoroughly trustworthy person to the mine for the purpose of ascertaining what has been done with our money. This will take but a very little time, as a day or two's inspection will be ample to satisfy an expert as to whether our money has been judiciously expended. On his return we can determine what our next course must be, but until that time we must necessarily allow matters to rest as they are. I shall be glad to do all in my power to further such an end as this, and I ask my fellow shareholders to wake up, convene a meeting, and do what we have to do without another moment's loss of time.

Oct. 4. A Shareholder.

CEDAR CREEK GOLD MINES AND WATER COMPANY.

Sir,—Advices from San Francisco are to the effect that a revival has sprung up in California in favour of hydraulic gold mining. There are some thousands of square miles of old river gravel in California, and as the gravel contains gold in more or less quantity it will at once be seen what an enormous field exists for hydraulic mining. With the revival of the industry in California comes news of the proposed reconstruction of the Cedar Creek Gold Mines and Water Company, which was brought out in London some 10 years ago, with a capital of 200,000*l.*, in 5*l.* shares. This company went on in a flourishing manner for some time, paying dividends regularly, but a heavy cloud afterwards came over it, and checked its career. Money was raised on debentures, then in came the debenture-holders, and finally we heard of work being suspended at the mines.

I could never understand why the shareholders left the ship on the storm coming on, for the Cedar Creek Mines are undoubtedly a splendid property, and only require good management and a fair amount of capital expended in tunnel work to produce good results. All who have been over the Cedar Creek Mines pronounce them to be second to none in California.

I hear it is intended to call the shareholders together, when a plan is likely to be submitted for reconstructing the company, and as a great deal of the heavy exploration has been gone through at the mines there ought to be some early and satisfactory results from a resumption of operations.—*Oct.* 4. X.

NEW CALLAO.

Sir,—My clients have seen in last week's Journal a letter from the petitioner's solicitors impugning the correctness of counsel's opinion. The company are quite content to rely upon the advice they have obtained, and their confidence is not shaken by what has emanated from the writers of the letter. Those who advertise their opinion as the only correct one, and who publicly announce their own infallibility, should not forget that their efforts and advice in this case have only resulted in the petition being dismissed with an order against their client to pay the company's costs. The delay, it is humbly submitted, rests with the petitioner's solicitors. It was on their petition that judgment was pronounced, and if they cannot appeal till this is drawn up, one would expect them to draw it up. As to the intentions of the petitioner and his insignificant following, I can only say that no notice of appeal has been given by any of the parties, nor is any appeal pending. The company had evidence in court of the highest authority to contradict and rebut Mr. Attwood's affidavit, and I shall be most happy to deposit with you, for the inspection of yourself and your readers, copies of the evidence and of the judgment dismissing the petition. So far from the case not having been fully argued, the witnesses were cross-examined for days and days, the petitioner's counsel were fully heard, but the company went through the ordeal unscathed. The effect of the investigation has been to introduce new shareholders and to make the original members increase their holdings. Lewis Davis,

Moorgate-street, Oct. 5. The Company's Solicitor.

THE ROCK-DRILL CONTEST AT FALMOUTH.

Sir,—The letter in last week's Journal from Mr. J. McCulloch on the subject of the rock-drill contest at Falmouth contains one or two inaccuracies. The writer tries to impose upon the engineering and mining public. I have not the pleasure of Mr. McCulloch's acquaintance, so that I can have no personal feeling in the matter. In my report on the drill contest in question I neither said nor tried to make out that every drill was useless except the Eclipse. What I did was to give my idea of their mechanical merits, and having given the palm to the Eclipse, went on to describe and point out what appeared to me the weak points of the other drills. This I endeavoured to do fairly and honestly, and having no interest, good, bad, or indifferent in any drill, I had no selfish purpose to serve. Whilst at Falmouth I took considerable trouble to investigate them, and did this somewhat reluctantly. I felt it my duty to point out the weaknesses of the different drills; I did it with a view to those weaknesses being remedied, and the drills improved, and made more perfect in future.

As to the state of the bits, it is true the corner of the first bit used in the Cornish drill broke off, but this was before it had entered the stone to any extent, and it being at once noticed was immediately changed; but the second bit when removed from the hole after drilling was nearly in as good state as when it began, and, in my opinion, showed how well it was tempered, the result, no doubt, of the previous Tuesday's trials at the mine near Camborne. This day's trials Mr. McCulloch may wish the public to forget, but it will be readily seen what an advantage it gave his drill over others which came from a distance. As to the arrangements made on the second day for boring, Mr. McCulloch states that there was no one on the Cornish drill side present when the arrangement was made that each drill should run for ten minutes; so that he is probably unaware that standing next to the gentleman who proposed the arrangement was Mr. Holman, the other part owner and patentee of the drill. Mr. Holman I know well, and therefore could not be mistaken in him. Besides every drill owner was pointedly asked if he agreed to the arrangement, and there was no dissent. As to the number of men who took part in the handling of each drill during its running, Mr. McCulloch glosses over this by substituting the words "looking after the interests of the Cornish drill." I never made use of any such words, nor can the words I used be twisted into meaning any such thing. I do not know the number of men who were looking after the interests of any one drill, but even if there were 20 what had that to do with the point? What I remarked upon was that whilst only two men were employed in and about every other drill whilst running, three were employed on the Cornish drill—one to feed the drill to the rock, one to pour water into the hole, and the third sat himself down almost immediately under the drill armed with a hammer the more readily to change the bits. This third man was, of course, unnecessary, and was dispensed with whilst the other drills were running. When, however, Mr. McCulloch speaks of those interested in the Eclipse, he evidently forgets that in addition to the three men mentioned there was Mr. Holman, as also that a gentleman who whilst the Cornish drill was running in the first day's trial walked up to Mr. Holman and audibly told him that the drill was not being fed fast enough. Considering the position this gentleman occupied in regard to the trial, it meant, to my mind, something more than a mere interest. As to the wear and tear on feed screws, &c., most people consider that the fewer parts in a rock drill the better, and it has been the aim of many drill inventors to take credit for a less number of parts in their drills than any other. Not so, however, Mr. McCulloch. He implies that the wear and tear on the one feed-screw and one feed-nut generally used in all other hand-fed drills but his own are so great as to need improvement. In this, perhaps, he is right; but

how he has effected the improvement by adding an additional feed screw, three-toothed wheels geared into each other, and one feed-nut, making in all two feed-screws, three toothed-wheels, and two feed-nuts in the Cornish drill, as against one feed-screw and one feed-nut in the other drills; and when it is taken into consideration that the least damage to any one of these screws, toothed-wheels, or feed-nuts puts the drill out of working order, the improvement is questionable.

As to the valves of the two drills, Mr. McCulloch says that the valve of the first made Cornish drills has worked for the past 12 months, and is nearly as good as the first day put in. I certainly think he should give more convincing evidence of this. It must be borne in mind that the valve of the Cornish drill is of the common tappet order, and when it is considered that for every stroke made by the piston the tappet receive two blows—that is, if the drill be running at any speed, about 1000 blows a minute, it becomes apparent, in my opinion, that sooner or later the tappets will crumble and break, and should the piece go into the cylinder that, too, is spoilt in a few moments. I care not how slight the blow may be it must cause wear, much the same as constant dripping of water will wear away a stone. On the other hand, the valve of the Eclipse receives no blow whatever no matter how fast the drill may be working, and consequently there is no wear and tear from that cause. Moreover, from its construction, after once being properly fitted, it never fails to work—that is, if it be kept free from dirt, as all such machinery should be. I have made careful enquiries in the Callington and Tavistock districts, and cannot learn that this part of the drill gives any trouble by sticking or otherwise—so much for the valves of the two drills. To further prove my assertions, I give the result of my enquiries about some drills sent into the East Pool Mine, Cornwall. About June last four drills were put into this mine—two Eclipse and two Cornish, and as there was some dispute as to the comparative merits of the two classes of drills, the officials of the mine remarked that two or three months would prove which was the best. In this remark they were right, for on the very day the trials at Falmouth commenced the valve arrangement of one of the Cornish drills came to grief completely, and the officials had it sent to the surface, replacing it by a third Eclipse, which happened to be on the mine. On enquiring which of the two drills was preferred, I was at once told the Eclipse, and on further asking the reason, the reply was, "That it can be depended upon for working a long time without having to be sent to the surface for repairs," whilst the Cornish cannot. In this case it appears that Mr. McCulloch's valve arrangement did not last 12 months, and then prove nearly as good as when first put in.

Having already trespassed on your space to too great an extent, I would here close were it not for the concluding paragraph in Mr. McCulloch's letter. There he boldly suggests a motive on my part for the production of the report on the drill trials. In reply, I will do no more than give my word that no such motive existed.

London, Oct. 4. AN OCCASIONAL CORRESPONDENT.

ROCK-DRILL CONTEST.

SIR,—We notice in last week's Journal Mr. J. McCulloch's letter, wherein he is greatly astonished at what he calls the temerity of an Occasional Correspondent's letter to the Journal of Sept. 23 in his description of the various drills used in the contest at Falmouth on the 13th and 14th ult., and amongst them our Eclipse drill. No doubt Mr. McCulloch thinks by maligning the Eclipse drill he will enhance the value of the Cornish drill, but we think differently. We have no intention of departing from our established rule in connection with any rival machines; our Eclipse drill and Reliance air-compressors have stood the test, not only in every part of the United Kingdom, but almost in every part of the civilised globe, and are spoken of in the highest terms by those using them. This, we think, is sufficient proof of their value. We may mention that the valve of the Eclipse drill is pronounced by every scientific man who has examined it to be the greatest novelty of the age. One thing we would like to call Mr. McCulloch's attention to is that it was Hathorn and Co. who first introduced him—Mr. McCulloch—into Cornwall and found him the machinery to take his first contract, and which said machinery was the Eclipse rock-drills and Reliance air-compressors. We, therefore, think Mr. McCulloch's criticisms and spleen is, to say the least of it, ill-timed and ungrateful, and much resembles the fable where the man having found the snake frozen took it home and restored its vitality, only afterwards for it to turn round and bite the hand that saved its life. We now refrain from saying further on this occasion.—*Charing Cross, Oct. 5.* HATHORN AND CO.

MINERAL RESOURCES OF IRELAND.

SIR,—I am glad to see that attention is being at last directed through your valuable Journal to the long-neglected mineral resources of Ireland. These have hitherto been, comparatively speaking, unknown, owing mainly to the remoteness (often) of their situation and the difficulty and cost of transport. I can from personal knowledge speak of one district where these difficulties will now have been overcome by the introduction of new and important railway facilities. I refer especially to the large beds of iron ore in the county of Leitrim, in the neighbourhood of Dromahair, and which have been proved to be at least equal in quality to the best Scotch black band. The newly constructed line of the Sligo, Leitrim, and Northern Counties Railway will open up the whole of this important district, and the station at Dromahair will be an outlet for the produce, whether of the ironstone in its raw condition or after it shall have been smelted at the ironworks, which are only waiting for this new outlet to invite the attention of capitalists.

London, Oct. 4. ANGLO-HIBERNICUS.

MINING IN THE CALLINGTON DISTRICT.

SIR,—Last Saturday was another red letter day for Callington the town was quite astir on account of starting the engine at New Redmoor. The engine is a 80 in. cylinder, nearly new, with four 13 ton boilers with new 16 in. pitwork, and the shaft has been put in thorough working order. They are now draining the mine below the 100 fm. level; when they get at the 125 or bottom level they will find two tin lodes lying towards each other, and not more than 3 ft. apart, so by sinking another lift the two lodes will form a junction, when judging from the quality and quantity of the tin now being broken in the 40 and 80 fm. levels may reasonably expect to find the lode to surpass anything ever seen in the district as far as tin is concerned. I have seen some of the rocks just brought to surface that by merely cobbing, as you would copper or lead dredge, it would fetch 50*l.* per ton. The most surprising thing is to see the amount of work done in the small space of time; it is only 15 months since this company put the first man to work, in this small space of time they have taken down the old engine-house and built a new and substantial one, purchased and erected the engine, also drawing-engine with steam capstan complete, cleared and secured hundreds of fathoms of levels, and put in footways through the winzes for the men to descend and ascend to the various parts of the mine, also laid open hundreds of fathoms of ground that can be taken away and leave a profit to the shareholders as soon as they have completed their tramroads. The shaftmen have shown themselves very smart under the guidance of their pitman to complete such amount of work in 10 months—to clear, case, and divide, put in footroad, cut ground for bearers and cisterns, and fix and drop 110 fms. of pitwork, and every part of it new; it shows they were able to see through their work thoroughly, as I find they have never had one mistake, not so much as in a bolt-hole from the commencement. Last but not least the manager and managing directors have done their part well, as they have caused every material to be on the ground by the time it was wanted, and now I find they have just returned from purchasing their stamping machinery so as to get it erected by the time they get a sufficient pile to the surface to commence dressing and getting ready for market. The baptismal ceremony was performed in the presence of a large number of shareholders and miners. The directors were represented by Messrs. Sykes, the Chairman of directors, and G. Whiffin, both of London—Mr. Sykes performing the baptismal ceremony, giving his own name to the engine and shaft, then breaking a bottle of champagne against its face amidst the enthusiastic cheers of all present. The tower bells were sending their merry peals in the ears of the people for miles around all the afternoon in honour of the event. After the ceremony being ended at the mine they adjourned to Golding's Hotel, at a public dinner provided for the occasion, when a comfortable evening was spent by both the employers and the employed.

Trebartha Lemarne is another tin mine in the district that is opening up well. This mine, although worked 200 years ago and gave the proprietor a princely fortune, was never worked other than open workings. The present company have driven two adits some distance in the side of a hill, one under the other, and have put a rise up and holed to the shallow level, and now made it a sufficient size for a permanent shaft, and have commenced sinking under the deep adit. They have now on the mine about 200 tons of the lode broken and ready for the stamps. The directors deemed it prudent not to be too hasty in getting machinery before they proved the lode sufficient to warrant the outlay. Now they are quite satisfied they have a good mine opening up they have a water-wheel erected for pumping the water; they will soon now be erecting their stamps and preparing for market. One very great advantage in this property is they have a very large and everlasting supply of water for every purpose requisite for mining for hundreds of years to come. I would strongly recommend all intending purchasers to buy as early as possible, as I am quite confident shares will soon be four times the present price.

Callington Oct. 5. JNO. BUCKINGHAM.

COPPER MINING COMPANIES.

SIR,—The continued improvement in the price of copper has awakened a disposition to buy the shares of copper mining companies. In selecting their investment the public do not seem to me to exercise any discrimination, but blindly purchase high-priced shares, which give a much lower return than others of the same class equally safe but less known. Hence the favour with which the Spanish mining companies—Rio Tinto and Mason Barry—are regarded as compared with the Chilian mines, Panulcillo and Copiapo. Rio Tinto 10*l.* shares are about 165 per cent. per annum. This company paid last year 14 per cent.; should the same dividend be continued an investor will obtain 5½ per cent. on his money.

Panulcillo 4*l.* shares, carrying accrued dividend for the half-year at the rate of 15 per cent. per annum just declared, are at 7*l.*, or 75 per cent. premium. An investor at the present price—say, 6¾*l.*—ex the 6s. dividend payable on the 10th inst., obtains almost 9 per cent. on his money. Copiapo 4*l.* shares, with 3*l.* 8s. paid, are quoted at only 18 per cent. premium. This company issues monthly reports of its earnings, but presents its accounts annually, paying in the meanwhile small quarterly dividends at the rate of 6 per cent. Three quarterly dividends have been paid for the financial year ending June last, and a final dividend will be declared at the end of this month. The Copiapo profits for the last six months amounted to 7523*l.*, and the price of copper ranged from 58*l.* 10s. to 67*l.* During the first seven months of the present year the profits were 12,755*l.*, and the price of copper from 71*l.* to 68¼*l.*, the lowest being 63¼*l.* A dividend of at least 10 per cent. may be expected for the past year, and this would give a return at the present price of 8½ per cent. on the investment.

With copper at 71*l.* per ton there is a great margin for improvement in the profits of all the mining companies. It is singular that Rio Tintos should be bought to yield only 5½ per cent., while Panulcillo and Copiapos can be got at prices which give a return of 8½ or 9 per cent on the money.—*London, Oct. 4.* J. K.

MONA COPPER MINES.

SIR,—With the rise in copper these mines are likely to come to the front again; and when it is considered there are only 8000 shares, and the great majority held at high prices by an influential constituency, it is not improbable that an advance to at least double their present value may not be far distant. These mines in former times returned 4,000,000*l.* in profits during a century's working, and it is stated, upon authority practical and reliable, they are not half worked out. The working in Cairns' and Sidney's shafts, now both 90 fms. deep, have been and still are rich for copper; thousands of tons of copper ore have been extracted from them. The Marquis' shaft in the late working proved immensely profitable for copper. The workings in Charlotte's and Carreg-y-doll shafts also proved to be fabulously rich. Now, between these shafts and Marquis' there is nothing done below the 30 fm. level, and there is a run of 200 fms. of ground, and yet the whole of this ground was very rich for copper, more or less, down to the 30 fm. level. Tiddy shaft is in the midst of this run of ground now sinking below the 30 fm. level, where they are driving south to intersect five lodes of great value, which proved rich above the 30 in bygone days; this is one of the most important features of this property. I might here mention that the produce of these valuable mines consists of copper ore, pyrites, solder, ochre, purple stone, and blue stone, not excluding silver. Last year they sold some 16,000*l.* worth of mineral. The company possess very large smelting works, where they reduce their copper ore to a regulus, and at the present market value it will realise 35*l.* per ton. I have reason to believe they will very shortly smelt 5000 tons of copper ore or more yearly—say, some 18,000*l.*—which would leave a large profit for dividend, excluding all other produce. Mona Mines have, without an exception, proved the richest and most profitable mining property in the kingdom, and if the mines are not yet half worked out, there is every reason to look for a bright future, and I think there cannot be a doubt but the mines will continue rich for another century, and with copper at a fair price they will pay large profits to the shareholders. The shares stand at about 5*l.* each, and may be worth the attention of those who look after cheap mining investments with a good and great future in store. INVESTIGATOR.

London, Oct. 5.

P.S.—At the Cornwall copper ore sale at Redruth, on Oct. 5, the standard for copper advanced 4*l.* 15s.

BWLCH UNITED MINES.

SIR,—Will you kindly give space in your valuable Journal for the following remarks on the above mine. Being in Wales a short time ago on mining business in the neighbourhood of Aberystwith, and hearing of the recent discoveries of lead ore made at the Bwlch United Mines, and the probability of its becoming a great success, I availed myself of the opportunity of visiting the mine. After a long and pleasant drive I reached the summit of the hill, and met the chief agent, Capt. Northey, for the first time. He kindly showed me over the extensive mining property, and pointed out the numerous rich productive lodes, some of which have produced vast quantities of rich lead ore, whilst the others are comparatively new, the lead produced from them being exceedingly rich, and contains a high percentage of silver that holds out great prospects for a future success. I first examined the motive-power for pumping, drawing, crushing, and dressing the minerals. I was rather surprised to see such a never-failing flow of water brought in at an elevation of 400 to 500 ft. above the sea level, sufficient to work a powerful 45 ft. diameter drawing-wheel, also a magnificent 50 ft. diameter pumping-wheel, which drains the mine and works a large surface ram or plunger that revolves the water, and gives ample power to drive a 40 ft. diameter crusher-wheel and a 30-in. crusher. I then examined the dressing-floors and the machinery which were in good order and working well, being capable of treating five times the present quantity. Great credit is due to Capt. Northey for the skilful manner in which he has constructed the flooring and machinery, which are all worked by a 20 ft. diameter water-wheel. I made enquiries of him respecting the new discoveries and the probability of the future returns, he told me that he has, and will increase the returns. I was then taken to the upper floors and was shown the lead as it came from underground in its rough state, and was greatly surprised to see such large heaps of rich silver ore awaiting to be broken to pass through the crusher. I then went to the office and examined the specimens of ore, some were from 3 to 4 cwts. I enquired where they came from, and was informed that they were brought from the various lodes where recent discoveries had been made, some of which in virgin ground, and was told that the lode was healthy and strong, and is producing equally as rich silver ore as I witnessed on the upper floors. Better and richer specimens I never saw. The rumours throughout Aberystwith were in no way exaggerated. I can congratulate the shareholders in having one of the most promising mines in the county of Cardiganshire, having ample machinery for all purposes. With a slight advance in lead this mine would at once enter the Dividend List. A CAPITALIST.

Oct. 5.

PROMISE AND PERFORMANCE—THE GOGINAN SILVER LEAD MINE.

SIR,—When I wrote to you respecting the Goginan Mine, on Sept. 18, I did not expect the discovery announced in last week's Journal was so near at hand, and it is very satisfactory to find that the efforts of the managers have resulted so well. The discovery is, without doubt, a most important one, as it will open an entirely new section of ore ground, which is believed to be of very large extent, and to contain a vast quantity of rich silver-lead ore. I may also remark that the discovery has been made at almost the exact spot, and within the time indicated by the managers, when the company commenced operations, and the precision with which these results have been achieved reminds one greatly of the tact, forethought, and promptitude exhibited by Sir Garnet Wolseley in the Egyptian campaign, the results foretold being realised almost to the day. In mining as in war almost everything depends upon a good general, and I may safely say that as regards the Goginan Company they are exceptionally well off as to generalship, their able managers and board of directors being sure to command success in almost any enterprise they undertake.

As regards the great importance of this discovery I may mention that it will render available for taking away a very long run of ore ground between the point of discovery and the old workings, in a portion of the mine from which all their vast returns (amounting in the aggregate to over 400,000*l.*) were made by the former proprietors. Secondly, the discovery is in whole ground, giving extensive backs to stope at, which will occupy many years to exhaust; and, thirdly, in driving the 27 fm. level considerably to the east of this point a run of ore of the same rich quality as that raised by the former proprietors (containing about 30 ozs. of silver to the ton) has been passed through, conclusively proving that the deposit lengthens considerably in going down. Another feature is that great economy will be effected in getting the ore to the dressing-floors.

I hear that excellent progress continues to be made with the rock-drill in opening out the resources of this great mine, and we may therefore, expect to shortly hear that further important discoveries have been made, which, from all I can gather from careful enquiries made on the spot, bid fair to be of even greater importance than the one just announced. The shareholders in this mine are to be congratulated on the rapid and successful opening out of their property, and as all members of the company stand on an equal footing—there being no promoters to take the cream of the profit—the result should be exceedingly remunerative. The great fact of the produce of this mine being silver-lead ore should not be lost sight of, as its market value is about 5*l.* per ton higher than that of what is called Potter's lead—that is lead without silver—and the cost of getting is the same in both cases; this difference in value is sufficient to pay good dividends in the worst of times.

I have watched the progress of this undertaking almost from its commencement, and am satisfied that there is a long period of prosperity in store for it, and that for very many years to come it will hold a leading position amongst the Cardiganshire mines.

Abbey Foregate, Shrewsbury, Oct. 4. INVESTIGATOR.

HUNTINGTON SULPHUR AND COPPER COMPANY.

SIR,—It was gratifying to see that none of the directors at their meeting with the shareholders lately combated the remark made by a shareholder that "they had frittered away both time and money without good result," but honestly acknowledged their position and informed the meeting that Captain Nance, their new manager, having thoroughly explored the mines had reported with the greatest confidence that with the necessary outlay for machinery (instead of working by manual labour as heretofore) the mines could be worked with very profitable results. It is also very reassuring to shareholders that the directors have that confidence in success that they have plucked up courage to float preference shares, in order to put the mines in a position that will most certainly yield a good return to all interested. The few shareholders who have not yet responded to their allotments of the preference shares should avail themselves of the few days of grace extended to them, and not be discouraged by the operations of "bulls" and "bears." They will be very quickly picked up when offered to the public, as I am assured upon very sound authority that if even one-third of Captain Nance's ideas are realised they will not only be able to pay 10 per cent. to the preference but a satisfactory dividend to the ordinary shareholders also Another satisfactory point is that the directors have now begun to publish (as other companies do) reports from the mines giving the working results, and considering the results reported a few days ago of only two rock drills now going, that when the others are started and the full complement of hands employed and all in thorough working operation, the Huntington will redeem its character and prove the falsity of the old proverb (in this instance)—"To give a dog an ill name you may as well hang him." J. T.

Pollokshields, Sept. 30.

BASSET AND BULLER CONSOLS.

SIR,—On my road to Wheal Basset to-day I called at these mines, and found that the pumping-engine (55-in.) is nearly ready for motion. One boiler is *in situ*, and the other nearly ready to be so placed, but one boiler will supply sufficient steam for draining the mine to the 60. The agents have been hindered by the want of a capstan, which should be supplied at once to ensure expedition in letting down the pitwork. It should be a steam-capstan, the engine for which could also be utilised for winding. I am sorry that, owing to the want of appliances, operations have been somewhat hindered. Rods for pumping are dropped to the adit, and others are ready for dropping below; but the danger and waste of time in the use of a winch instead of a capstan in letting down the rods is considerable, and should not continue. There are 30 fms. of 14-in. pitwork ready to drop to the 30, and 18 fms. of main rods. I found that every needful work was being done that can be done with deficient appliances to get the engine in readiness for starting.

Truro, Oct. 5. R. SYMONS.

MINING IN GWENNAP.

SIR,—The parish of Gwennap, so celebrated in the annals of Cornish mining for its unparalleled production of copper ore, presents signs of renewed life. Several of its mines, abandoned many years ago, have been leased to gentlemen of influence, and capital has been, and is being, raised to provide plant for their drainage and prosecution. A few years ago there was scarcely a mine in the parish under development, now there are several mines exhibiting somewhat of their ancient activities: North and South Penstruthal, Comford, Tresavean, Cathedral, West Poldice, &c., to wit. There is a mine on Cosgarne Common lately denominated Trevince Consols, now Wheal Britannia, where six or eight men have recently been set to work to prepare for the machinery necessary for the full exposition and extraction of the deposits of copper and tin ores known to be within its limits. It is reported, and I believe truly so, that the extensive mines, well known under the name of the Clifford Amalgamated, are to be re-opened by a powerful party. If that be done, it is probable that the mines westward therefrom—Wheal Jewell, Wheal Damsel, Tingtang, &c., will also be taken in hand.

When I went to Gwennap, in 1827, there was only one mine in the parish quiescent—Wheal Squire, which also deserves resumption. It is shallow, as compared with mines in general, being only about 140 fms. under adit. It lies immediately west of, and is contiguous to, Clifford Amalgamated Mines. The mines now idle in Gwennap are Poldice and Wheal Unity (in the hands of Capt. Teague), Wheal Maiden, Carharrack, East Damsel, West Damsel, Wheal Jewell,

West Jewell, Wheal Gorland, Tingtang, Treskerby, and some others above mentioned. It is not improbable that some of the present generation may see them all again in operation. No parish in the county has yielded so much metallic mineral as Gwennap, and its riches are far from exhaustion. R. Symons.

Truro, Oct. 4.

OPTIONAL PURCHASE OF MINES.

Sir,—I must state that I entirely agree with your remarks in last week's Journal on this subject, and would remind capitalists and investors that there are numerous highly mineralised properties lying idle for the want of a small capital to develope them; and now there is increased firmness in the metal market, with further enhanced prices, the results may be anticipated without fear of disappointment. Everything is in favour of mining enterprise labour, and all materials requisite are cheap; in fact, economics of production, by means of powerful explosives and boring machinery, are on the miners' side. The districts recommended are Llanarmon and Diphwys Festiniog. The former is renowned as one of the best lead-bearing regions ever opened out. Various companies have worked it with uniform success, and it is notorious that it has yielded more ore in a given time than any other district in Wales. The original Nant and Westminster Mines produced upwards of 2,000,000*l.*, and other mines equally as rich in accordance with their area. Throughout this district run several well defined and strongly mineralised lodes, and wherever miners have worked in them they have been handsomely rewarded. The lodes are by no means exhausted, being in whole ground for hundreds of fathoms, and the geological stratification is all that can be desired for the production of immense quantities of ore. Diphwys district is noted for its richness of the lead ore in silver, also copper and gold; and if the enormous amount of capital had been sent here instead of to India large dividends would have been the result, and no doubt the public have learned ere this that it is wiser to invest in home than in foreign mines. In conclusion, should capitalists wish to embark in *bona fide* mines on the optional purchase system, I shall be happy to place before them several I have on hand to be worked on that principal.

John L. M. Fraser,
Greenfield, Wrexham, Oct. 5. Consulting Mining Engineer.

TRESAVEAN MINE.

Sir,—Although operations for the further development of Tresavean Mine commenced about twelve months ago, I had not visited the mine till to-day. I went there to satisfy myself as to the actual state of things, having heard so many reports relating to the discoveries of tin in the sett. Concerning that subject I intended to send you a particular statement, which, however, I found to be unnecessary, because the agents have forwarded a detailed report for insertion in your Journal. I found the 90-in. engine at work, it is a beautiful machine, and will command all the water which finds its way into the mine; but the water is not so abundant as in some areas of less extent. There is on the mine a steam capstan with wire rope. There is a stamping engine pulverising the tinstone, and two iron axles are on the ground for early addition. On the dressing-floor, which is to be extended, there are several round buddles at work—the motion being derived from a water-wheel. A calcining-house, smithy, and other buildings are erected. A self-acting tramway about ½ of a mile in length is constructed to convey the tinstone down the hill to the stamps. A considerable number of new pumps, of large calibre, are on the surface in readiness for dropping into the engine-shaft when required. The drainage is progressing fairly—water clear to the 50 or 60 fm. level. The account-house in which I used to dine occasionally, about 50 years ago, has been repaired, and it reminded me of olden times when the agents used to feast so luxuriously. Nearly all the men of those days are off life's stage. Since the date referred to, account-house economy has been introduced.

It is really surprising that the last workers paid so very little attention to the development of the tin lodes which are in the sett, and from which the present company are likely to derive great profit, independently of the copper ore which they will find in the bottom of the mine. The same disregard for tin was manifested in Clifford Amalgamated Mines, a particular account concerning which mines I purpose sending to you for next week's Journal. This mine (Tresavean) gave to the previous company a profit of 450,000*l.* When the profits ceased they resolved to make a call of 10*l.* per share (512's); but when only 50s. per share of that was paid in they abandoned the mine! A very unnatural or unusual proceeding in a mine which had proved so valuable. R. Symons.

Truro, Oct. 4.

POLCREBO TIN MINE.

Sir,—I have seen several satisfactory reports about this mine, and have heard a great deal respecting the character of the ground for the production of mineral; it is considered the most favourable character for producing tin in large quantities. A few days since I took the opportunity of visiting the mine, when I was agreeably surprised to see the rich tinstuff on the surface and the engine so recently started. However, this may be easily explained, it is only the truthful statements corroborated which was made by the former workers, it is seldom that such a rich lode is seen so shallow. It was a great sight to the district to see so many gentlemen on the mine at the meeting, and also to the shareholders to see the large tin specimens on the table. The work on the mine has been energetically carried on, and it is a great acquisition to the present company that the shaft is sunk to the 30; it should be borne in mind the ore ground already reported laid open at the 17 level seems practically certain that the extending of the 30 level east will place the mine in such position not to be equalled in the county. Other points in the mine are certain of great value, and I see preparations are being made to develope that part of the property. I know of no mine in the county have such future prospects for the outlay. J. R

[For remainder of Original Correspondence see Journal.]

Anderton Tin Mine.—At the first four-monthly meeting of shareholders, held on Monday, the accounts showed a credit balance of 153*l.*, and the Chairman (Mr. James Murray, the purser) stated that every item owing to that day was paid. Since May they had sold 20 tons of tin, realising a good profit. He also mentioned that 7 tons of tin were sold last Saturday, and after every cost and charge had been met there remained a profit of 132*l.* With regard to the future of the mine he stated that at a depth of about 50 fms. the lode extended over 500 fms. east of the cross-course, and he, therefore, thought the shareholders were justified in assuming that the mine would continue equal in worth to what they had so far proved it to be. He was sure they had a very rich mine. The shaft was sunk 70 fms., and the engine to be put in the mine very shortly would unwater it, and enable them to reach the ground at that depth. Mr. R. Walters reported upon the operations at the mine, and recommended a small shaft being sunk from the surface to come down on the back of the stope, which would give ventilation, and the tin ground could then be taken away at less cost. All the dressing-floors, wheel, stamps, &c., are working well and in good condition. It was decided that an engine should be put into the mine forthwith, and a committee was appointed to confer with the purser on the subject.

New Redmoor Mine—Starting of the New Engine.—The ceremony of christening the new 80-in. pumping engine and naming the shaft—the Sykes engine and shaft—was performed on Sept. 30. The working of the engine was most satisfactory, and Mr. W. Mathews, C.E, the company's engineer, was eulogised for his creditable superintendence of the erection and fixing of the engine and shaft machinery. Mr. David Sykes, J.P., the Chairman of the board of directors, after congratulating all interested in the mine upon the complete success and satisfaction which had attended everything connected with the work that had brought them together, he observed what great advantage would accrue to the town and district of Callington from having a mine giving employment to such a large number of persons in their midst in active operations.—Capt. Bennett exhibited a fine specimen of tin, and remarked that they had several stopes producing good tin, ground left by the old workers. He could not understand why they had been abandoned; unless it was, as he supposed, because tin was so low in the market at that time. Again, at the 40 east they had good tin; they were producing as rich stones of tin at the 40 as the specimen they had just seen. (Applause.) One grand point in connection with that mine was that Johnson's lode, that great lode which every man spoke well of was underlaying on the north side, so that in all probability those two great tin lodes formed a grand junction, a realisation of which he hoped they should all live to see. He had no doubt that very shortly in the course of the working large rocks of tin would be sent to surface, large quantities of tin sold and large profits made.—Dr. Kempthorne, speaking of his own knowledge of the mines of the Callington district, said there had been formerly hundreds of men working at Holmbush and Redmoor Mines, and if these mines had been then worked systematically, as they were being worked now, they would never have ceased. The deeper they went the richer they would be found to get. There were hundreds of men working there 33 years ago, but they were badly worked, not systematically or scientifically; if that had not been the case the result would have been different. From the time he came there the mines had been going down. There had been adverse circumstances which had caused the mines to pass from the condition of successful to inoperative mines; like other mines in this country, they had to battle with foreign competition, but by new systems and plans they would be enabled to compete with foreign competition. He did not believe there was another mine in the county which surpassed theirs.—Messrs. Nicolls, Mathews, and Pearse addressed the meeting, after which the proceedings terminated.

FOREIGN MINING AND METALLURGY.

The Belgian coal trade has continued generally firm. At Liége as well as at Charleroi and Mons, the demand is considerable, and producers dispose of their output without difficulty. Many contracts concluded some time since could not now be carried through upon the same terms. This is especially the case in the Borinage, where stocks are falling off in a very marked fashion. Household coal is beginning to be in considerable demand, and on the first frosts we expect to witness a serious advance in quotations. Industrial coal has also been well maintained in Belgium, but notwithstanding the strong demand for it, it cannot be said that prices have advanced. The colliery proprietors of the Plateau de Herve have raised their rates 5d. to 10d. per ton for industrial coal. French colliery proprietors appear to have a fair number of orders on hand, and are not, accordingly, seeking new contracts with any very great eagerness. In Germany the condition of the coal trade is generally satisfactory. The requirements of consumers appear to be increasing week by week, and fresh contracts are being concluded for the autumn, and even for the winter months. The demand does not relate exclusively to industrial coal, but begins to be very decided for household coal. Coke has been in steady demand upon the German markets, and the firms producing it expect that they will shortly be called upon to increase their means of production. Of the coal imported into Germany this year more than 80 per cent. has come from England.

The Belgian iron trade has remained in much the same state. Some firms, especially those devoted to the construction of railway plant, are not doing very much. On the other hand, others are extremely well off for work, and have even to refuse orders. Pig has been in considerable demand. At Charleroi negociations have commenced for deliveries to be made in the first quarter of 1883. This is looking far ahead, as usually new contracts at the commencement of each year are not undertaken until January. Probably the present negociations noticed for contracts are due to an anticipation of an upward movement in prices, which, for the rest, is rendered probable by the advance which has been made in coke. Some contracts, embracing from 7000 to 8000 tons of pig, to be delivered in March, 1883, have been concluded at 2*l.* 8s. 10d. to 2*l.* 9s. 8d. per ton. Iron has made about 5*l.* 12s. per ton. This rate has scarcely become general, but some firms have succeeded in securing it. English pig has slightly risen, having made 2*l.* 12s. 10d. per ton. Girders have been maintained at 5*l.* 16s. to 6*l.* per ton. Plates have been held with firmness at 7*l.* 12s. per ton for No. 2, and 8*l.* 8s. for No. 3. The John Cockerill Company has just launched from its Hoboken yard a steel steamer named the St. Mathieu, built for M. M. Le Roy and Co., of Havre.

Quotations have not materially varied in the French iron trade. At Nancy refining pig has made 2*l.* 16s. for No. 3, and casting pig 3*l.* 8s. per ton. At Longwy refining pig has made 2*l.* 16s. per ton, and No. 3 casting pig 3*l.* 6s. 6d. per ton. Merchants' iron has brought 8*l.* per ton at Paris. M. Dandoy, a Belgian, has just been appointed director of the Hautmont Basin Ironworks. M. Dujardin remains attached to the same establishment as engineer. An adjudication of some importance for fish-plates has just taken place on account of the French State Railways. Some of the lots of iron fish-plates were taken at prices ranging from 7*l.* 3s. 3d. to 8*l.* 5s. per ton. The steel-works in the Department of the Nord received the greater part of the orders given out. The prices obtained for the steel fish-plates contracted for ranged between 8*l.* 16s. to 9*l.* 1s. per ton. Contracts for two of the lots offered for competition were not let. The adjudication comprised altogether about 8500 tons of fish-plates. It appears from official returns that the imports of iron minerals into France in the first eight months of this year were 939,918 tons, as compared with 854,653 tons in the corresponding period of 1881, and 790,533 tons in the corresponding period of 1880. Of the iron minerals imported into France in the first eight months of this year 246,003 tons came from Germany, 331,819 tons from Spain, and 217,738 tons from Algeria. The exports of iron minerals from France in the first eight months of this year were 75,707 tons, as compared with 49,421 tons in the corresponding period of 1881, and 71,755 tons in the corresponding period of 1881. The demand for iron upon the German markets has continued considerable, and an advance in prices is regarded as not improbable.

IN RE HOOVER HILL GOLD MINING COMPANY (LIMITED).

This was a petition presented to Mr. Justice Day by a shareholder to wind up a company with a capital of 120,000*l.*, and having very large funds in hand, on the ground that the substantial objects for which the company was formed had failed.

The company was formed for the purchase of an estate in North Carolina, alleged in the prospectus to contain "an auriferous channel of ferruginous clay-slate some 400 ft. wide," and running for nearly a mile through the estate. It transpired after about twelve months' working that the belt of clay in question was not really auriferous, and that a serious fraud had been committed. The purchase-money for the estate had been 40,000*l.* in paid-up shares, and 30,000*l.* in cash, and the company had expended 20,000*l.* more in working the mine. There still, however, remained 30,000*l.* in hand, In consequence of the unsatisfactory receipts from the workings the directors, early in the present year, sent out a gentleman to investigate and report upon the present position and future prospects of the mine, and the effect of his report was that, although the auriferous belt of clay was not likely to produce much gold, the expenditure of the 20,000*l.* by the company had "revealed ground which would pay for working," and he pointed out a method of "proving the mine," at an expense of 5000*l.* or thereabouts, which he recommended the directors to adopt. This advice commended itself to the board, and at a general meeting of the company, held on July 31 last, the report and the whole position of the company having been submitted to the shareholders, the recommendation to expend the sum of 5000*l.* for the purposes above mentioned was unanimously adopted by a very large majority of the shareholders present in person or by proxy, at the meeting. On Sept. 11 the petitioner presented his petition to wind up the company.

Mr. Barber, Q.C., and Mr. E. Beaumont appeared for the petitioner; and Mr. Oswald, Mr. Butcher, and Mr. Whinney appeared for shareholders who supported the petition; Mr. Marten, Q.C., and Mr. Bethell for the company opposed the winding up; and the opposition was supported by Mr. Israel Davis and Mr. Etherington on behalf of other shareholders.

One of the grounds of objection taken was that the petitioner had an opportunity of objecting at the meeting, but did not object to the adoption of the report; that part of the 5000*l.* had already been spent, which would not have been spent had opposition to it been raised at the meeting; and that by his conduct, and his delay in instituting these proceedings, the petitioner had virtually acquiesced in the resolutions passed at that meeting. The principal ground, however, was that he was in a comparatively small minority of shareholders who now wished for the winding up; that it was really for the shareholders themselves to decide whether or not to carry on the business for which the company was formed, and that the shareholders had resolved in general meeting to do so.

His Lordship decided that the substratum upon which the company had been founded had failed; that the gold mine described in the prospectus, which was the common object towards the working of which the shareholders had subscribed their capital had substantially ceased to exist; and that the present proposal to spend 5000*l.* was really a new departure and a fresh speculation. Under these circumstances he held that any of the shareholders who were really parties were entitled to have a dissolution of the partnership, or, in other words, an order to wind up the company. The only doubt which he had entertained for a moment was whether the petitioner had in any way estopped himself by his delay, and whether he had not acquiesced in the resolution adopting the report; but, on the whole, he came to the conclusion that he had not done, or neglected to do, anything which precluded him from asking for a compulsory winding up, and his Lordship made the order accordingly.

In view of an appeal by the company against his Lordship's order it was agreed between all parties, with his Lordship's consent, that the Chairman of the company should be appointed official liquidator, but that no further proceedings should be taken by any of the parties until after the second day for interlocutory motions in the Court of Appeal in the next Michaelmas sittings.

The cause came before the Court again on Wednesday, when it appeared that Mr. Justice Day, who made the order, had since had occasion to reconsider the matter, and had come to the conclusion that it would have been better not to have appointed a provisonal liquidator at all; and the order was, by consent, now varied by omitting that part of it which appointed the Chairman such provisional liquidator. The order for the winding up therefore stands, but no steps of any kind are to be taken in the liquidation until after the decision of the Court of Appeal.

REPORT FROM CORNWALL.

Oct. 5.—There is nothing very exciting in the condition of mining affairs at the present moment, which is rather contrary to general expectation, for it was certainly not anticipated that the advance in the metal market, which has been making such steady progress of late, would be stayed just here. However, if there is disappointment there need be no surprise, nor need the disappointment be of a very serious character. Such periods of what we may call fluctuative inaction—"marking time," as it were, to use a military expression—are commonly followed by a genuine movement in the right direction. We cannot believe but that within the next three or four weeks, whatever casual influences may be at work to the contrary, three if not four advances, or what may be equivalent to them, will be made. Tin cannot have reached its highest year-mark for 1882. General improvements are being again reported from almost every mining district in the county. We have often noted this curious fact, that even the most distantly related mines seem to have a link in either good or bad fortune. This time, fortunately, it is good fortune that predominates. Probably natural causes connected with the successive depths reached have something to do with this fact, for fact it undoubtedly is though an odd one. Camborne, which is making a strenuous effort to provide itself with science and art schools, is on the verge of success, in healthy rivalship with Redruth. Mr. Basset is behaving with his accustomed liberality to all such movements—handing over his laboratory, an additional site, and a handsome subscription. With the customary aid from South Kensington, and the money already promised, the means are so far provided that there need be no further delay in making a start.

The dividends in Cornish mines up to the present moment for the year have been calculated at 81,885*l.*, as returned from ten mines—East Pool, Dolcoath, Grenville, West Basset, South Camborne, Killifreth, Phœnix, Peevor, Mellanear, and Gunnislake (Clitters). East Pool heads the list, and will continue to do for the year. We can hardly estimate exactly, however, what the actual dividend profits are. Wheal Eliza is doing well, and there ought to be some thousands to add from that source also, while there are some other properties of a private or semi-private character, which appear to be paying their way and something more. Probably 90,000*l.* up to the present moment is quite as near the mark as the 82,000*l.*, which is all that can be definitely ascertained.

Cornish workers have as usual attained success in the Turner competition by their work in granite and serpentine, &c.—not only has Penryn made its mark as it ought, but the sixth, seventh, and eighth prizes have all gone to Penzance competitors—J. Carter, Walter Ede, and H. Oliver. It would be a very satisfactory result if these awards would help to bring ornamental works in our local ornamental stone more prominently to the front.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Oct. 5.—That we are on the eve of an advance in Earl Dudley's furnace coal of 1s. per ton is more generally believed this week than last. Hence colliery owners are firm in demanding the better prices announced in last report. And proportionately consumers are more eager than a week ago to get their quarter's contracts accepted before the gatherings of the trade next week. Vendors, however, hang fire as to acceptance except at a full 1s. rise on best forge and mill and furnace coal. Some good sales of cokes have recently taken place and sellers of best sorts quoted on 'Change this afternoon in Birmingham:—South Yorkshire best ground washed 17s. 6d. per ton delivered, best Durham furnace 21s. 6d. per ton delivered, and Durham foundry sorts 24s. to 25s. per ton. Ironstone is rather firmer at 6s. per ton delivered for Northampton sorts. Hematite pigs were strong to-day; the maximum quotation was that for the Carnforth brand—72s. 6d. Other sorts ranged down to 65s. Best native pigs for forward deliveries were not to be had at under 70s., which was an advance of 2s. 6d. per ton. Some descriptions of part-mine and cinder pigs were 1s. 3d. up on the week. Agents for Derbyshire makers reported that they had refused offers to buy at 48s. 6d. at stations. Manufactured iron showed increased firmness all round. A 10s. advance in marked bars is one of the strong probabilities of Quarter-day, and it is understood that the best sheet firms intend to declare an advance of 1*l.* per ton. Circulars are to hand from some common bar makers advising a rise of 5s. per ton.

On Wednesday Mr. E. Fisher Smith, the Chairman of the Coalmasters' Association, met some of the colliers' delegates at the Priory Offices, Dudley, relative to the men's demand for a 10 per cent. rise in wages. He explained that he had only the previous evening returned from the Continent. The delegates pressed for a reply to their demand on Friday. Mr. Smith said that there would not be time to call a general meeting of the Coalmasters' Association by that date, but that he would consult some of the leading members, and return the men a reply on Friday. It is hoped that this assurance will induce the men who have come out on strike in the Dudley district to resume work. At West Bromwich, where the men struck at the beginning of the week, some of the masters have induced a return to work by consenting to a 5 per cent. rise. The men at the Sandwell Park Colliery are on strike for a 10 per cent. rise, and at Oldbury the delegates have demanded 15 per cent.

In North Staffordshire the notice for a 10 per cent. advance, which last week was participated in only by the men North of Tunstall, has this week become general throughout the district.

The annual meeting of the South Staffordshire Mines Drainage Commissioners was held in Wolverhampton on Wednesday. Mr. Walter Williams consented to be re-elected Chairman, but the other business of the meeting was postponed for a week, when the commissioners will discuss an important proposition relative to the future conduct of the commission, which is to be brought on by Mr. W. Bassano.

The Cakemore Brickworks and Collieries (Limited), near Dudley, owns extensive works for the manufacture of Staffordshire blue bricks, and also a large colliery working the 30-foot seam of thick coal. The capital fully-paid up is 90,000*l.*, in addition to which there are large sums due on mortgage and to creditors. The company being unable to meet its engagements, an order has been made by the Court to wind-up, and Mr. Justice Fry has appointed Mr. John Edey, chartered accountant, Change-alley, Sheffield, the liquidator.

The South Staffordshire Institute of Mining Engineers monthly meeting was held in the Museum, Dudley, on Monday—Mr. Henry Johnson, jun., the vice-president in the chair. There were also present, among others:—Messrs W. North, H. Johnson, J. Hughes, D.

Rogers, R. Latham, T. Oakes, I. Foley, J. M. Fellowes, E. Cole, G. Turner, and Alex. Smith, M.I.C.E. (secretary).—Votes of condolence with the family of the late Mr. Rowley, of Sedgley, and the family of the late Mr. Brooke Smith were passed.—Mr. H. Johnson alluded to the fact that Mr. Smith was the first in South Staffordshire to practically delineate the workings underground upon plans for reference. One of the earliest of these plans was dated 1828, and is in the possession of the Institute.—A vote of thanks was passed to Mr. Marten, of Stourbridge, for a photograph of Stephenson's "Puffing Billy," or first locomotive.—The secretary reported that Mr. Sopwith was nearly ready with a paper containing full particulars of the lime process of getting coal.—A vote of thanks was passed to Mr. Fred. North for his volume on the coal fields of Natal.—The members present congratulated Mr. George Turner on his recent appointment as general manager of a colliery company at Makum, Assam, India.

TRADE OF THE TYNE AND WEAR.

Oct. 3.—The steam coal works here continue, on the whole, to be well employed; there is again a great demand for steam coal, that is, the large coal produced in Northumberland, for Alexandria and the East. The Northumberland men continue to work steadily a full day's work; they have not as yet reduced the output, nor is it likely that they will do so. The quarterly report of the accountants appointed under the sliding-scale for that district has been published, from which it appears that the average selling price of coal for that period was 5s. 0·53d. per ton, being a decrease of 0·75d. per ton in the price in November, 1878. The wages of the miners will, therefore, remain unaltered. The coal trade in Durham continues to improve, but a movement for restricting the output has to some extent been adopted by the miners, and this has had the effect of retarding the loading of vessels to some extent; the movement is not, however, likely to be much extended. The house coal in Durham was advanced 1s. per ton on Monday; there is a growing scarcity of this coal in this district, and consequently its value must improve.

It is remarkable that the movement for the drainage of the collieries on the Tyne, when so much High Main coal is under water, has made no progress. Some years ago the Tyne Coal Company established engines at Wallsend for this purpose, but only proceeded so far as to enable them to repair the tubbing which had failed at the Hebburn Collieries, and since that time they have greatly developed the works at that place, both in the Bensham and Low Main seams, but have not proceeded to remove the water from the High Main seam at Wallsend. On the south side of the Tyne the High Main water has been tubbed off many years at the Tyne Main and Felling Collieries, but the water in the Low Main seam, 60 fathoms below the High Main seam, has also been accumulating, and it now extends over a considerable area. The main origin of the Low Main water is in the workings from the Oakwellgate Collieries, which were extended north-west from that pit until the Tyne river was reached, and the workings were extended to some distance under the bed of the river, and only 20 fathoms below it; thus the water was let in, and as drifts were driven from Oakwellgate until a holing was made into the Tyne Main workings the water also filled all those workings. A large tract of this royalty belongs to the Ecclesiastical Commissioners and there are several seams in this royalty, some of them partially worked, and in those a large amount of pillars remain, while others are unwrought. In the famous Hutton seam, which is here from 5 to 6 ft. in thickness there remains a considerable amount in pillars. The seams below the Hutton seam have been little worked; a few years ago Sir George Elliot acquired the Felling Colliery, and he sunk a considerable distance below the Hutton seam, and since that time a seam has been worked there which they call the Busty, which is converted into coke. The Busty seam is a famous one in the Manby Hall district, but we do not think the name is rightly applied at Felling. The seam worked is more likely to be the Harvey and Brockwell seams, which lie immediately under the Hutton seam at Norwood, Team Collieries, Heworth, Workington, indeed over the whole of North and South Durham. The section and quality of these lower seams, that is, the Harvey and Brockwell seams, vary considerably, but when the section is favourable the Harvey seam is an excellent house coal, and the Brockwell seam is an excellent coking coal. Before the flooding of the High Main Seam the Tyne, the Friars' Goose, or Tyne Main Colliery, was a pumping station, and a large quantity of water was lifted here; but as the depth of the High Main seam at this point is not great the cost of lifting the water was comparatively trifling. As remarked above, the High Main water has been tubbed off some years at those works, but the Low Main seam is flooded over a considerable area, and it is now proposed by the Ecclesiastical Commissioners to put down a pumping engine at this place, which will clear the seam of the water, and thus give access to the pillars and barriers remaining in the seam, and also pave the way to exploring the lower seams, which will, no doubt be effected at no distant date.

The strike of lead miners in Weardale has terminated to some extent, part of the men, about 30 in number, having returned to work.

The iron trade has exhibited considerable animation this week, and higher prices have been obtained. The shipments of pig-iron during the past month have been very heavy, and are expected to reach 100,000 tons, more than half the production in Cleveland during the month. Stocks are expected to show a great reduction on the month, and this gives great confidence both to makers and merchants. There has been much activity amongst buyers lately; makers now quote 45s. for No. 3 pig-iron. The stock of Messrs. Connal now stands at 108,928 tons—a reduction of 108,928 tons on the week. It is curious that the manufactured iron trade has not improved, and the price of finished now has receded a little. This, however, cannot continue long. There is not much change in quotations. Ship-plates are 6*l.* 15s.; boiler-plates, 7*l.* 15s. Coke has been in good request at Middlesborough, and the price improves. On Tuesday the return of the makers' stocks in the North of England was issued. There are now 120 furnaces in blast, 44 damped down or out. Stocks here decreased to the extent of 40,221 tons in September as compared with August. An important meeting of ironmasters was held on the same day, when the question of continuing the restriction of the make was considered, and after some discussion it was decided to continue the restriction until the end of the present year.

The success of the Tynemouth Exhibition has far exceeded the most sanguine expectations of its promoters, and it continues to be visited by large numbers of people. Although the exhibits cover a wide range of ground many of the manufactures and industries of this great district are not represented. The iron shipbuilding and marine engine building trades are, of course, fully represented, and also the machinery used in dock making, dredging rivers, &c., diving bell, life-saving apparatus, &c.—while the exhibition of improved gas lights and electric lights is most extensive and complete.

The Cranston Rock-Drill.—This remarkable and valuable rock-drill is on view at the Exhibition in the Submarine Section. This drill is the invention of a Newcastle engineer, and it has been introduced and worked extensively, not only in this country, but in various parts of the world—in Brazil, &c. Some very interesting experiments are being made at the present time with this drill at the quarries of Messrs. Pease at Swinston, in the Weardale district. A hole has been drilled 18 ft. by 2 in. diameter. This hole was charged with 450 lbs. of powder, and the blast it is estimated removed 3000 tons of stone. There is no doubt that the machine is very effective. The hole alluded to above was drilled in five hours, so that the saving, as compared with hand labour, is enormous.

The National Railway Exhibition at Darlington was opened on Tuesday, and it is of a very interesting character. The various coupling appliances, or models of them, are shown, which have been invented in late years, which enable the couplings to be joined and disconnected without the men going in between the trucks, the old system having caused the loss of many lives. There are also models of switches, engines, both marine and locomotive, &c. There is also a novelty in the shape of a model engine being driven on rails by electricity as a motive power. The Exhibition, in fact, has developed from the modest dimensions first laid out for it into one of considerable proportions and of great variety. The Exhibition took its rise under the auspices of the Amalgamated Society of Railway Servants, whose annual Conference at Darlington opened on Tuesday, having for its object the stimulating of invention, and to make appliances known for the saving of life and limb on railways. There are a great number of models of automatic couplings shown, the due merits of which will be appraised by the judges appointed to decide therein, and by whom certificates will be awarded. In addition to machinery, models of railway bridges, &c., are shown, including one of the High Level Bridge, Newcastle, by Mr. Simpkin, of Gateshead. Exhibits have been sent from various parts of the kingdom, and also from the United States and from the Continent of Europe. The North-Eastern Railway has rendered every assistance by carrying goods free, and most of the other railways have also rendered assistance in this way. The Exhibition was opened by Mr. David Dale, and will be kept open until the end of the week.

TRADE IN SOUTH WALES.

Oct. 5.—We announced the other week that four seams of coal of different thicknesses had been found in the Coegnant Pit, in the Llynvi Valley. At the Pwllgwaun Colliery, Pontypridd, a seam 2 ft. 10 in. thick has just been struck, and is found to be full of gas-yielding properties. The Treferig Railway will open up a new valley full of house coal, none of which has as yet been worked. It is anticipated that this will be a busy place shortly. Attention is also being drawn to the Cwmgorse district, which is full of unworked coal, which must find its place of shipment at Swansea All these facts combined tend to show that the increased demand for coal in this district will be fully met by an increased output. The strikes which are going on all over the country among the colliers will not affect South Wales and Monmouthshire, as all the men are working under a sliding scale which has just been renewed. Mr. Thomas Joseph, whose recent failure was announced in these columns, is endeavouring to form his various undertakings into a company, by which he hopes to pay his creditors in full. His property has been valued at 230,000*l.* The amount of coal sent away from Cardiff last week was 138,958 tons foreign and 19,409 coastwise; Newport, 29,939 tons foreign and 25,199 coastwise; Swansea, 18,582 tons foreign and 6669 coastwise. The patent fuel trade is healthy, 5416 tons having been sent away during the week.

The Landore Steelworks strike has come to an end, by the men returning to work on the masters' terms, except the hammermen at the same works. This company is still paying higher wages than any similar works in the country, some classes of workmen varying from 3*l.* 10s. to 5*l.* 10s. per week of five days. Other steelworks are fairly employed, at prices which are not deemed satisfactory, and an attempt is being made to raise them, but while contracts are taken so low on the Continent it is impossible to do so. The Germans are taking orders at summer rates, but the quality is generally in accordance with the prices. Iron has been shipped at Cardiff to the extent of 1386 tons, and quantities are at Newport ready for shipment. Iron ore has been received at Cardiff, from Bilbao, to the extent of 12,414 tons, and 420 from other places. At Newport 11,444 tons have been received frem Bilbao, and 5150 from other places.

Tin-plates maintain their quiet quotation, at 16s. 6d. to 17s. per box, in consequence of the lowness of stocks, while charcoal made are from 18s. 6d. to 21s. It is intended to open the whole of the closed works this winter, either partially or wholly, so that prices will soon be brought down to their former level. The Alexandra Dock Company, at Newport, will henceforth be known as Alexandra Docks and Railway Company, as there will be two docks and a railway running from the Rhondda Valley to Newport in connection with the scheme. It is proposed to form a dock at the mouth of the River Ogmore, and to make a railway in connectirn with it, and the necessary funds have been already subscribed. Mr. Abernethy, C.E., and Mr. R. Price Williams are the engineers. The proposed dock at Barry Island will, probably, be carried out if the scheme to purchase the whole of the Bute Docks from Lord Bute falls through. The Taff Vale employees are agitating for shorter hours, but the directors, although willing to make some slight concessions, have refused to accede to the men's terms.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Oct. 5.—The miners' wages question has been the all-absorbing item of importance during the week in North Derbyshire. At the close of last week several of the colliery companies offered their men advances from 5 to 7½ per cent. on application. This has evidently had the effect of emboldening the men, for yesterday there was a gathering of the miners at Chesterfield, when it was determined to seek for the full 15 per cent., and to obtain it by every legitimate means. This precipitancy on the part of the Derbyshire coalowners is likely to bear the fruit that might be expected, and they will only have themselves to blame if they are obliged to make still further concessions. The proprietors in the adjoining district of South Yorkshire, on the other hand, have stated that the state of the coal trade is such that they cannot give any advance whatever, and to show that this is the case have offered to submit their books to the inspection of any accountants that may be appointed for the purpose. But the action taken by the Derbyshire coalowners is a strong argument that will be taken advantage of by those who are agitating for the full advance of 15 per cent., so that that the former have not only been working against themselves but against others as well. The coal trade is certainly better than it has been for some considerable time past, whilst prices are also much higher, but considering the very low summer rates the profits for the year so far will be very moderate indeed. Large quantities of house coal have been sent to London from the Clay Cross and several other collieries, for there has been quite a run on the part of consumers, who hearing so much of the agitation amongst the miners evidently think that there is likely to be a repetition of the alarm which took place in 1872 and 1873, when prices went up to such a very high point. As it is coal is now 3s. per ton higher in the Metropolis than it was three months ago. If this increase went direct into the pockets of the colliery proprietors they could well afford to give the 15 per cent. advance. But such is not the case, for the merchants or middlemen fix the prices, without considering the charge made at the pits. Silkstones are now sold at 24s. per ton in London, yet these have been purchased at the collieries at 8s. 6d. to 9s. per ton. Steam coal has been going off tolerably well of late, but the consumption is not so large as it was some time since. Manufacturers have been taking larger supplies than usual, in anticipation of prices going up Indeed the demand for fuel of all kinds is good, and will be until the present agitation and uncertainty has terminated. At the ironworks in North Derbyshire there is still a large production of pig, with a steady demand outside the home consumption. In manufactured iron, however, there has not been any change, and the production of mill material is still but moderate.

The Sheffield manufacturers, like those in other parts of the country have been taking in large supplies of coal, so as to be prepared in the event of the collieries being stopped for a time. The consequence is that the collieries having depôts in the town have been sending large quantities of coal to them, whilst prices have gone up. Both the iron and steel trades are in a healthy state, the prices of the raw material being firm. A heavy tonnage of steel-faced armour-plates is being turned out at Brown's and Cammell's, who are also busily engaged on other descriptions of rolled iron and steel. Makers of both Bessemer and crucible steel are doing well in both billets and ingots, special qualities of the former being produced for both cutlery and tools. Edge tools, saws, and files are in steady request, and there has been a fair business done in shears. The cutlery houses have been doing well of late both for the home markets and for exportation, although prices of the best qualities of table and pocket knives have gone up considerably in consequence of the advance in the price of the haftings in particular. There is not so much doing in steel rails, our makers being at a disadvantage as compared with those in the North of England and Lancashire, but in ordinary railway material there has been no falling off. At the foundries trade has been tolerably good, more particularly in heavy castings for machinery.

In South Yorkshire the coal trade has been good, especially as regards household qualities; but the owners evidently do not intend to give the advance of wages asked for, seeing that the price at which coal has been selling will not admit of their doing so. Whatever may be the opinion in other districts, in this it is believed that there will be no strike, so far as regards the West Riding collieries, the men in which are probably the best paid of any. The Executive of the Miners' Association, however, has been very busy in forcing on the agitation; but no mention whatever has been made in any of their manifestos as to how the men are to be supported in the event of their striking, and the most thoughtful of the men are drawing attention to this fact. The Association itself numbers not more than 7000 members, out of a total of about 60,000 engaged at the mines in Yorkshire, and even for the smaller number there is not a fund that would keep them for a week. As a contrast to the action of the Association, may be pointed out that at the Manvers Main Colliery, one of the largest in the West Riding, the miners on Thursday commenced the work at a reduction of 2½ per cent. on the wages previously paid. This was in accordance with the sliding scale agreed upon by both sides, and which is admitted to be the fairest means for regulating wages.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Oct. 5.—The colliers' threatened strike in North Wales is for the present averted. The coalowners have offered an advance of 5 per cent., which the men have accepted. The owners hope to recoup themselves by an advance of 1s. per ton in the price of coal, which I hope they may get. Lord Trevor, as owner of Ifton Colliery, was fined 10*l.* and costs by the Oswestry magistrates last week for neglecting to have a person on the pit-bank when men were working below. This charge arose out of the death of the youth Kynarton, who, it will be remembered, was killed during the night, some time back, by a fall of roof. It was stated in the course of the trial that the Government Inspector had never been down the pit. If this is so the question arises whether a more frequent examination of the underground workings of mines and collieries by inspectors or their assistants is not necessary. Whether it is not as important a part of their duty to assist by their advice and suggestions in the prevention of accidents as it is to prosecute offenders against the law after an accident has taken place. The works of the Llangynog Railway seem to be slow in commencing. Several important enterprises in that valley are awaiting the beginning of these works in earnest. Extensive machinery has been erected at the Bwlch Creolan Mine, near Penybont, for the dressing of the ore. If I read Mr. Davies' book rightly he intimates that this mine is in strata which have never yet yielded much ore. What will he say now? The other lead mine trials in the northern part of the county of Montgomery are idle, but it is said a company is being formed to work the Ochrygraig Mine, in the village of Llangynog.

NEW AND ECONOMIC GOLD AMALGAMATION PROCESS.

That in many cases auriferous deposits which contain gold in moderate quantity are constantly worked at a loss through inability to manipulate it in sufficiently large quantities has now been indisputably proved, whilst the advantage of dealing with enormous masses of mineral was shown in the case of the St. John del Rey Company's property, where, with heavy expenditure for management and working, and a very poor ore from the mines, the large quantity treated enabled them to distribute handsome dividends to the shareholders for a long series of years. Moreover, it is not improbable that the serious disappointment which has attended the working of the Indian gold mines is in a great measure due to the small quantity of stone treated, owing to the knowledge possessed by the managers, that with the appliances at their disposal they have no mineral that will yield profit, although they have plenty that contains a few shillings' worth of gold to the ton. What has always appeared to be wanting in newly opened gold regions has been a compact and reliable machine which will do its work with very little attention, and extract the last particle of the precious metal contained in the stuff. Such a machine, the invention of Mr. Erastus S. Bennett, has, it appears, been for some time in successful operation in Colorado, and it is hoped that ere long it will be yielding equally good returns in the gold region of West Africa, in India, and, perhaps, in the Transvaal, should the confident assertions that its existence in that country in payable quantities is merely mythical be disproved, for on Wednesday a number of scientific and other gentlemen visited the old-established engineering works of Messrs. Brinjes and Goodwin, Fieldgate-street, Whitechapel, to see the progress made with the construction of Bennett's dry placer amalgamator, for so it is designated, now being introduced on this side of the Atlantic by Messrs. Tillett and Rowland, of Cheapside. The dry placer amalgamator is particularly intended for working placer deposits, where the gold is so fine and light it cannot be saved by any other means, and where there is not sufficient water for sluicing, and in this it appears to have succeeded admirably.

The essentials of success in an apparatus of this kind are solidity, simplicity, and facility for transport, and it may be added that it must be arranged that the consumption of mercury is small, and that in whatever state the gold may exist it shall be caught. The Bennett amalgamator is not only extremely simple and strong, but appears to have scarcely any parts which can suffer from wear and tear. It consists of a sieve, an amalgamator, and a tailings elevator combined, and by describing these in order a fair general idea of the machine may be obtained. The sieve, which is cylindrical and is placed transversely to and above the amalgamator proper, receives the crushed mineral from a hopper, and it need scarcely be said that the finer pay dirt falls directly into the amalgamator, the refuse, in the shape of boulders and the like, being separated and thrown out no second treatment being necessary. The great novelty is found in the amalgamator itself, which is a tank formed of a W shaped pair of troughs some 10 ft. or 12 ft. long and 5 ft. wide, the whole tank surmounted by vertical sides. In the open portion of each V, and running entirely along the centre, is a water main about 3 in. diameter, from which there dips a series of vertical pipes, each with a peculiarly shaped mouthpiece, which just clears the bottom of the V. At the end of the machine opposite to the cylindrical sieve is an elevator wheel or tailing wheel arranged to lift the refuse mineral from the bottom of the troughs. Neatly packed in the hollow of the troughs formed by the W is a small steam-engine for rotating the sieve and tailing-wheel. To facilitate transport the whole apparatus is mounted with a pair of axles and suitable wheels, so that it becomes a real wagon, in which the various smaller parts can be conveniently packed.

When the machine is to be used the tank is filled with water so far that the cylindrical sieve may be about one-third submerged; the steam is turned on to put the sieve and tailing-wheel in motion, and water is pumped through the main. From the angle at which the water is let escape from the jet-pipes the water is kept in a regular and constant spiral whirl from one end of the tank to the other. The finely pulverised pay dirt falling from the sieve is supported by the water in motion a sufficient length of time for the ore and metal to separate themselves thoroughly according to their specific gravity, the gold being quickly caught by the amalgamating plates (which consist of a series of step-plates covering the entire sides of the tank and troughs), and the refuse gradually passing on to the tailing-wheel. There is no mercury in bulk in any part of the machine, and there can be really no loss of mercury, because even the small quantity that may trickle down the plates will deposit itself with any heavy gold which may exist in the stuff treated in the troughs below the ends of the jet-pipes, whence it is collected at each clean-up. The machine certainly appears to be admirably designed for performing the work it is intended for, and there is no reason why it should not give as much satisfaction in the old world as in the new. It is understood that the patent rights for West Africa have been already sold, indeed the machine seen on Wednesday at Messrs. Brinjes and Goodwin's is to be forthwith sent to the Gold Coast, and that other companies are to be at once formed for developing the invention wherever gold is found. Those interested have, doubtless, a large field for operation, and feel fully justified in assuming that it is a field that may be profitably worked in the interest of both manufacturers and gold miners.

PROVINCIAL STOCK AND SHARE MARKETS.

Cornish Mine Share Market.—Mr. J. H. Reynolds, stock and sharebroker, Redruth (Oct. 5), writes: There has not been very much doing for the week, tin not having been quite so firm. Dolcoaths are steady at 79 for the meeting, East Pools scarcely so firm, Penhalls rather lower, also West Kitty. Killifreth improved to 5⅛ buyers. South Crofty and West Frances likewise stronger. South Frances hardly so good. Subjoined are the closing quotations:—Blue Hills, 1¼ to 1½; Carn Brea, 10 to 11; Cook's Kitchen, 42 to 43; Dolcoath, 78½ to 78¾; East Pool, 53⅛ to 54; East Blue Hills, 10s. to 12s.; Killifreth, 5⅜ to 5⅛; Marke Valley, ⅛ to ¼; Mellanear, 4¾ to 5; New Cook's Kitchen, 7 to 7⅛; New Kitty, 2¾ to 3; North Buny, ¾ to ⅞; North Herodsfoot, ⅜ to ½; North Penstruthal, ⅜ to ½; Pedn-an-drea, 3¾ to 3⅜; Phœnix, 3 to 3⅛; South Condurrow, 9¼ to 9⅜; South Crofty, 13 to 13¼; South Frances, 13½ to 14; Tincroft, 13⅛ to 14; Tregembo, 3⅞ to 4⅛; West Basset, 9½ to 10; West Frances, 12 to 12⅝; West Kitty, 15 to 15⅝; West Peevor, 11 to 12; West Polbreen, ⅞ to 1; West Poldice, 4 to 4⅛; West Tolgus, 16 to 18; West Seton, 18 to 19; Wheal Agar, 17 to 17⅛; Wheal Basset, 10½ to 11; Wheal Grenville, 10 to 10⅛; Wheal Hony and Trelawny, 2¼ to 2½; Wheal Jane, ¾ to 1; Wheal Kitty, (St. Agnes), 2⅜ to 2⅞; Wheal Peevor, 5 to 6; Wheal Prussia, ¾ to 1; Wheal Uny, 5⅛ to 5¾; Penhalls. 1½ to 1⅝.

— Messrs. Abbott and Wickett, stock and share brokers, Redruth (Oct. 5), write:—The market has not varied to any extent during the past week, and only a limited business has been done. Subjoined are the closing quotations:—Blue Hills, 1 to 1¼; Carn Brea, 10 to 11; Cook's Kitchen, 43 to 44; Dolcoath, 78¾ to 79¼; East Pool, 53¼ to 54; East Uny, ¾ to 1; Killifreth, 5⅜ to 5⅝; Penhalls, 1½ to 1⅝; New Cook's Kitchen, 6½ to 7; New Kitty, 2½ to 3; New Trumpet, 1 to 1¼; North Busy, ¾ to 1; Pedn-an-drea, 3¼ to 3⅜; Phœnix, 3 to 3⅛; South Condurrow, 9⅛ to 10; South Crofty, 12¾ to 13; South Frances, 13½ to 14; Tincroft, 13 to 13⅛; West Basset, 9 to 9⅛; West Kitty, 15 to 15⅛; West Peevor, 11 to 11½; West Frances, 11¾ to 12⅛; West Tolgus, 17 to 19; West Seton, 19 to 19½; Wheal Agar, 17 to 17⅛; Wheal Basset, 10½ to 10¾; Wheal Grenville, 10 to 10½; Wheal Jane, 1 to 1¼; Wheal Kitty, 2½ to 3; Wheal Peevor, 5 to 6; Wheal Prussia, ¾ to 1; Wheal Uny, 5 to 5¼.

— Mr. S. J. Davey, mine sharedealer, Redruth (Oct. 5), writes:—Our market has been very quiet all through this week. Prices of Cook's Kitchen, Killifreth, South Crofty, West Frances, and Wheal Kitty improved, but East Pool, Penhalls, Tincroft, West Basset, and Wheal Agar have declined. To-day there is next to nothing only doing. Subjoined are the closing prices:—Blue Hills, 1¼ to 1½; Carn Brea, 10 to 11; Cook's Kitchen, 43 to 43½; Dolcoath, 79 to 79½; East Blue Hills, 10s. to 12s. 6d; East Lovell, 1 to 1¼; East Pool, 53¾ to 54; Killifreth, 5£. 9s. to 5£. 11s.; Mellanear, 4¾ to 5; New Cook's Kitchen, 6¾ to 7; New Kitty, 2¾ to 3; North Busy, ⅞ to 1; Penhalls, 30s. to 32s. 6d.; Pedn-an-drea, 3¼ to 3½; Phœnix, 3 to 3¼; South Condurrow, 9¼ to 9¼; South Crofty, 13 to 13⅛; South Tolcarne, 3¼ to 3½; South Wheal Frances, 13½ to 14; Tincroft, 13 to 13⅛; West Basset, 9¼ to 9⅛; West Frances, 12 to 12½; West Kitty, 15 to 15⅛; West Peevor, 11⅛ to 12; West Poldice, 4 to 4¼; West Seton, 18½ to 19¾; West Tolgus, 17 to 19; Wheal Agar, 16¾ to 17¼; Wheal Basset, 10½ to 10¾; Wheal Comford, 1½ to 2; Wheal Grenville, 10 to 10¼; Wheal Jane, ¾ to 1; Wheal Peevor, 5 to 6; Wheal Kitty, 2⅝ to 2⅞; Wheal Uny, 5 to 5¼; East Uny, 15s. to 17s. 6d,

— Mr. M. W. Bawden, Liskeard (Oct. 5), writes:—The mining market presents a quiet appearance, and devoid of any active feature; most shares are being offered at slightly reduced prices although tin and copper are firm with an upward tendency. Subjoined are the closing quotations:—Bedford United, 2¼ to 2¾; Carn Brea, 10 to 10½; Cook's Kitchen, 41½ to 42; Dolcoath, 78½ to 79; Devon Consols, 5¾ to 6; East Caradon, ⅜ to ¾; East Lovell, 1 to 1⅛; East Pool, 53½ to 54; Gawton United, ¾ to ⅞; Glasgow Caradon, ⅞ to 1; Gunnislake (Clitters), 3¾ to 3⅞; Herodsfoot, ¾ to ⅞; Hingston Down, ¾ to ⅞; Killifreth, 5⅜ to 5½; Marke Valley, ⅛ to ¼; Mellanear, 5 to 5¼; New West Caradon, ¾ to ⅞; North Herodsfoot, ½ to ¾; Old Gunnislake, ¾ to ⅞; Phœnix United, 3¼ to 3½; Prince of Wales, ⅜ to ½; South Caradon, 17 to 17½; South Condurrow, 9¼ to 9½; South Crofty, 12½ to 13; South Devon United, ⅞ to 1; South Frances, 13½ to 14; Tincroft, 13 to 13½; West Basset, 10 to 10¼; West Caradon, ⅝ to ¾; West Frances, 10 to 10⅛; West Kitty, 15 to 15⅛; West Peevor, 11 to 11⅛; West Phœnix, ⅜ to ½; West Seton, 18 to 18½; Wheal Agar, 16½ to 17; Wheal Basset, 10¼ to 10⅜; Wheal Crebor, 3 to 3⅛; West Tolgus, 17 to 17½; Wheal Grenville, 10 to 10¼; Whea! Hony and Trelawny, 2¼ to 2½; Wheal Kitty, 2¾ to 3; Wheal Jane, 1 to 1⅛; Wheal Peevor, 5½ to 6; Wheal Uny, 5¾ to 5½; West Mary Ann, 1 to 1⅛.

— Mr. John Carter, mine sharedealer, Camborne (Oct. 5), writes:—The market is very quiet; a limited business only is transacted, and there is very little variation in prices. Closing quotations are annexed:—Carn Brea, 10 to 10⅛; Cook's Kitchen, 42 to 43; Dolcoath, 78½ to 79¼; East Pool, 53½ to 54; East Blue Hills, ½ to ⅝; Killifreth, 5⅜ to 5⅝; Mellanear, 4¾ to 5; New Cook's Kitchen, 7 to 7⅛; New Kitty, 2½ to 2¾; Pedn-an-drea, 3¼ to 3⅜; South Condurrow, 9⅛ to 9¼; South Crofty, 12¾ to 13¼; South Frances, 13¼ to 14; South Tolcarne, 3¼ to 3½; Tincroft, 13 to 13½; West Basset, 9⅛ to 10; West Frances, 12 to 12½; West Kitty, 15 to 15½; West Peevor, 11 to 12; West Poldice, 4 to 4¼; West Seton, 18½ to 19; West Tolgus, 15 to 17½; Wheal Agar, 16¾ to 17¼; Wheal Basset, 10½ to 11; Wheal Grenville, 10 to 10¼; Wheal Hony and Trelawny, 2¼ to 2½; Wheal Kitty, (St. Agnes), 2⅜ to 2⅞; Wheal Peevor, 5 to 6; Wheal Prussia, ¾ to 1; Wheal Uny, 5⅛ to 5¾; Penhalls. 1½ to 1⅝.

Manchester.—Messrs. Joseph R. and W. P. Baines, share brokers, Queen's Chambers, Market-street (Oct. 5), write:—With only a moderate amount of business passing numerous fluctuations have occurred during the past week, and up to to-day though the depreciation has not been in any instance the tendency has been to lower prices, presumably on account of fears being entertained that the price of money would to-day be further advanced. These fears, however, have not been realised, and some improvement in prices for the foremost securities is noticeable. Mexican railway stocks have marked some sudden changes, having slipped rapidly down to about 132, and as rapidly rallied, and to-day have changed hands at 141, at which price they were done a week ago to-day. Nothing of importance being known as to intentions with regard to Egypt has caused the stir in Egyptian stocks to ease off, and there have not been many transactions marked. Prices have been marked about 1 down during the week, but now figures are practically unchanged as compared with last week. In miscellaneous investments dealings are not numerous, and are pretty evenly distributed amongst the several descriptions reported upon. Taken all round the course of figures is fairly steady, with a slight adverse balance in altered quotations.

Banks are firm, but business is rather restricted. Dealings exhibit later quotations best of week, but the cases where firmer transactions show any falling off are very few, and of hardly any moment. Lancashire and Yorkshires have quoted a turn down on sellers' part, but now quote without alteration from a week since. Buyers' figure in Union of Manchester is a little better. National Provincial (new) following ordinary, have gone up ½, and the remaining changes are a rise of ½ each in Bank of Bolton, A, and Bank of Liverpool.

Insurance shares have produced rather more transactions than of late; figures realised call for no remark. Quotations give a majority (but slight) of adverse changes; none, however, are severe. Higher: National Boiler, ½; English and Scottish Boiler, 1/16; Queen, 1/16; and Reliance Marine, 1/16. Lower: United Fire Re-Insurance, ¼; Thames and Mersey Marine, ½; Royal (Liverpool), ½; Manchester Underwriters, ½; Liverpool and Globe, ½; and Lancashire and Yorkshire Accident, 1/16.

Coal, Iron, &c., and Mining.—A small general business transacted, tone weak, and prices showing alterations, with a decidedly adverse majority. Bolckows of all issues slow. Ebbw Vales almost entirely neglected. Canadian Copper have been a shade stronger, but now figures mark no improvement on last week. John Browns similarly moved. Llynvi Pref., sellers are ⅛ higher, but buyers do not alter. Tharsis are exceptionally higher, and Great Laxey Lead show marked improvement. Higher: Tharsis Sulphur and Copper, 2⅝; Great Laxey Lead, ⅛; Llynvi and Tondu, Ordinary, 1/16. Lower: Tredegar Iron and Coal, A, ⅛; Sheepbridge Coal, &c., ⅛; Indian Phœnix Gold, ¼; Rio Tinto, ¼; Telegraph Company and Maintenance, ⅛; Chillington Iron, ¼; Park Gate Iron, ¼; Indian Glenrock, ⅛; Bolckow (5£. paid), ⅛; and Bilbao Iron Ore, 1/16.

Cotton Spinning, &c.—Market dull, but prices steady. Published results of last quarter's working are fairly satisfactory, but the condition of trade does not give much encouragement to the operators.

Telegraphs lower where changed, but alterations are not general or severe. Anglo prices stationary. Direct, Globe Ordinary and Preference, and West India and Panama all ⅛ down.—Telephones, compared with recent weeks, are quiet, United are ⅛ higher, and Lancashire and Cheshire, with the exception of a shade better, buyers' figures are unaltered. In Corporation Stocks no change is reported, save an advance of ¼ in Leeds stock.—Miscellaneous present little of importance to notice. Crosses and Wentworth have sprung ⅝. Westhead's and Manchester Carriage and Trams Company are both trifle higher. Hudson's Bay and Rylands and Sons turn lower.

Railways.—A heaviness has acted unfavourably on prices during the most part of the week, occasioned by apprehensions of dearer money; this, however, not taking place, all values have made a sensible improvement, and the close is the best, Great Western and North-Easterns responding most, whilst others are ¼ to ½ better. Brighton have been prominent in their fluctuations, the extremes being 122½ and 124; the monthly statement had the effect of sending them down sharply, but steadier prices have ruled to-day. The Canadian markets have been active, and show a decided advance, their traffic return to-day (17,800£. increase) helping buyers to sustain values. American, subjected to depression on stringency of money at New York, and only manifested a better feeling yesterday, which to-day is partly lost. Their traffic returns must, however, tell favourably on their net earnings, and ultimately result in enhancing values.

Newcastle-on-Tyne.—Mr. Faraday Spence, Stock and Share Broker, Grey-street (Oct. 5), writes: This market, in common with others, has been quiet during the past week, but prices as a rule have been maintained. Barrow Hematite Steel Ordinary shares are 11⅞ to 12¼; and 6 per Cent. Preference, 10⅞ to 10¾. Bede Metal and Chemical shares are 20 to 20½. Bolckow, Vaughan, and Co.'s 20£. paid shares are 24½ to 24¾; 12£. paid shares, 13⅛ to 14⅝; New Ordinary shares, 8⅛ to 8¼; and 5 per Cent. Preference, 20⅛ to 20¼. C. Cammell and Co.'s shares are 67¼ to 67¾. Consett Iron are in good demand, and now stand 18½ to 19 prem. Consett Spanish Ores have improved to 40s., 40s. 6d. Darlington Steel and Iron shares are 2¾ to 3. John Abbot and Co.'s shares are 40 to 41. Orconera Iron Ore shares are 5⅜ to 5⅛. Palmer's Shipbuilding and Iron Co.'s A shares are 23⅞ to 24, and B 16¾ to 17. Skerne Iron shares are 1½ to 2. Tees Side Iron and Engine Works Ordinary shares are offered at 1½, but there is no demand for them at present. The 10 per cent. Preference shares are wanted at 2 1/16; no sellers. Tyne Forge Co.'s shares are at 14 7/16 to 14½. West Cumberland Iron and Steel Co.; an odd lot of shares have been done this week as low as 14, but 14½ is bid for a fair lot. Sellers at 14½. Wear Rolling Mills shares are nominally 1 to 1½.

Cashwell Lead Mine shares are 5s. to 10s. Crook Burn Mine shares are 1s. to 1s. 6d. Green Hurth Mine shares are offered at 8, whilst buyers could be found at a shade less. Harehope Gill Mine shares are 25s. 6d. to 26s. 6d. Healeyfield Mine shares are ⅛ to ¼. Hexham and Edmondbyers Mine shares are 17s. to 17s. 6d. North Green Hurth Mine 1£. paid shares are ⅜ to 1, and 4s. 6d. paid shares 6s. to 7s. Pattersyke Mine shares 5s. to 7s. 6d. Tharsis Sulphur and Copper 10£. paid shares have improved to 44⅛ to 44¾, and 7£. paid to 34 to 34⅛.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

Stirling.—Mr. J. Grant Maclean, sharebroker and ironbroker, (Oct. 5.), writes:—During the past week there has been a fair amount of business done, although prices have not advanced to a great extent, owing to the prospects of dearer money. Trade continues active, however, so prices may be expected to improve further.

In shares of coal, iron, and steel companies prices are generally higher. In the Scotch pig-iron market the price of warrants has advanced from 51s 3d. to 52s. 3d., owing to the active state of trade and the rise in makers' prices; while in Middlesborough the shipments are enormous, and the stocks decreasing rapidly. The Middlesborough masters have resolved to continue the agreement for restricted production up to the end of this year, independently of what the Scotch masters may do. The miners are also generally agitating for advanced wages. From the Scotch makers' report of stocks, issued yesterday, it appears that there is a decrease on the nine months of 86,000 tons; excluding two makers, whose decrease is estimated at 13,000 tons more. Clyde coal shares have advanced to 61s 3d., on the sale of their Spittal Hill Colliery at fully the upset price. The Steel Company of Scotland's meeting yesterday passed off well, and the year opens with good prospects, as they have considerable orders on hand, and have laid in their iron on favourable terms. This company's plant can annually produce 160,000 steel ingots and convert them into plates, angles, &c. Bilson and Crump Colliery are at 21s. 3d.; Llynvi and Tondu, 6⅞ to 7⅛; ditto (pref.), 70s. to 75s.; Lofthouse Colliery, 20s. to 10s. dis.; Omon and Cleland, 23s. 6d. to 24s.; and Rhymney Iron (debentures), 102 to 105.

In shares of foreign copper and lead companies the principal improvement has been in Tharsis, which have advanced from 43½ to 44½. Canadian Copper shares touched 24s. 3d., but are now easier at 23s. 6d. Bratsberg, 40s. to 45s.; Hultafall, 5s. to 10s.; Hungarian, 7s. 6d. to 10s.; Santa Cruz, 2s. 6d. to 5s.; Souback and Catir Alan, 15s. to 20s.; and Yorke Peninsula (Preference), 20s. to 25s.

In shares of home mines business has continued pretty active. Glasgow Caradon have improved from 17s. to 18s. 6d. The first four-monthly meeting of the Anderton Tin Mine has been held, and it appears that after every debt is paid there had a credit balance of 153£. Since this 7 tons of tin have been sold, and the net profit on these is 152£. There is every appearance from the reports that the mines will turn out well. Blue Hills are 25s. to 30s.; Hwlch United, 12s. 6d. to 17s. 6d.; Caron, 2s.; Devon Friendship, 8s. to 10s.; East Chiverton, 20s. to 22s. 6d.; East Craven Moor, 5s.; East Wheal Rose, 20s. to 25s.; East Devon Consols, 20s. to 25s.; Frongoch, 25s. to 35s.; Great Holways, 60s. to 80s.; Indian Queens, 3s. 9d. to 6s. 3d.; Kit Hills, 7s. 6d. to 12s. 6d.; Lady Bertha, 5s. to 10s.; Mount's Bay, 13s. 9d. to 16s. 3d.; Mount Carbis, 40s. to 50s.; New West Caradon, 5s. to 6s. 3d.; North Molton, 2s. 6d.; Old Shepherds, 10s. to 12s. 6d.; Old Owlacombe, 1s.; Parkas, 5s. to 10s.; Pennant, 40s. to 50s.; Prince of Wales, 10s. to 12s. 6d.; Parys Copper, 7s. 6d. to 10s.; Sortridge, 5s. to 8s.; Tamar, 6s. to 8s.; Tresavean, 13s. 9d. to 16s. 3d.; West Crebor, 7s. to 9s.; West Caradon, 10s. to 12s. 6d.; Wheal Crebor, 57s. 6d. to 62s. 6d.; Wheal George, 10s. to 20s.

In shares of gold and silver mines prices are generally better. Richmonds have improved to 8, 8¼; Organos unaltered. Almadas are at 14s. to 16s.; Akankoo, 5s. to 7s. 6d.; Colombian Hydraulic, 4s. to 6s.; Cedar Creek, 2s. 6d.; Exchequer, 1s. 3d. to 1s. 9d.; Indian Consolidated, 13s. 9d. to 15s.; Indian Kingston, 4s. to 5s.; Kohinoor, 19s. to 21s.; La Plata, 40s. to 42s. 6d.; New Gold Run, 3s. 6d.; Nundydroog, 4s. to 6s.; Plumas (Eureka), 32s. 6d. to 37s. 6d.; Sierra Buttes, 30s. to 32s. 6d.; Silver Peak, 2s. 6d. to 3s. 6d.; and Wynaad Perseverance, 15s. to 17s. 6d.

In shares of oil and miscellaneous companies there has been a further rise of oil shares, owing to continued reports of the wells in America giving way. Lawes' Chemicals are at 6½ to 7; and Nobel's Explosives, 31⅞ to 32.

Edinburgh.—Messrs. Thomas Miller and Sons, stock and share brokers, Princes-street (Oct. 4), write:—During the past week there has been a reduction of most railway ordinary stocks with quiet markets. Caledonian has receded from 108 to 107¾. London and North-Western, Midland, and others are also lower, but the tone at the close to-day was decidedly better. Grand Trunk of Canada stocks have fluctuated a good deal. The Ordinary has risen from 25 7/16 to 25 13/16, the Third Preference from 58½ to 58⅝. Americans have been weak. New York, Pennsylvania, and Ohio First Bonds have receded from 55⅝ to 54¾, Erie Shares from 44½ to 43¾, Ontario from 23¼ to 23⅛ Oregon Preference from 58 to 56½, Reading from 32 15/16 to 32⅝. Bank of Scotland has advanced from 314 to 317, Clydesdale from 23⅜ to 24. Royal has declined from 213½ to 213. Insurance shares have been quiet, and they scarcely show any change. A considerable amount of speculation has taken place in Clyde Coal shares, which have risen from 54s. 6d. to 60s. 6d. Tharsis shares have improved from 43 to 44¼, Marbella Iron from 6 7/16 to 6¼. Oil shares have been in demand. Broxburn have improved from 28⅝ to 29½, Burntisland from 10⅜ to 11 9/16, Midlothian from 6½ to 7 1/16. Uphall from 8 1/16 to 9 1/16, Young's Paraffin from 11½ to 12⅛. Assets Company shares have risen from 6¾ to 7 1/16. Edinburgh City Debt Bonds from 79 to 80.

IRISH MINING AND MISCELLANEOUS COMPANIES SHARE MARKET.

Cork.—Messrs. J. H. Carroll and Sons, stock and share brokers, South Mall (Oct. 4) write:—Markets more firm, and Great Southerns changed hands at 116⅜; Midlands were also done at 88¾, and Bandons were in demand at 86. National Banks were bought at 23 15-16ths, and Provincials at 26¼. Munsters advanced to 7, and Hibernians were done at 33⅜. Cork Steam Packets unchanged, at 11, and Lyons at 5¼. Gas shares were offered at 6¼, and Gouldings at 8¾. Gresham Hotels are sellers at 3⅜, and River Steamers at 13s. No change in Harbour Board Debentures.

THE IRON AND STEEL INSTITUTE.

[FROM OUR OWN REPORTER.]

The business portion of Thursday's proceedings commenced with the discussion of Mr. Pourcel's paper read the previous day, Mr. I. Lowthian Bell again occupying the chair.

Mr. Windsor Richards said he would be glad to know if the particular method Mr. Pourcel adopted for obtaining the gases from the steel was that used by Dr. Müller. That gentleman had made some small ingots, got a tank of water, and drilled a hole from the bottom of the ingot, and got enormous quantities of hydrogen. He (Mr. Richards) thought there was some error in using small ingots, and he got a large ingot made, and he had a hole drilled 8 or 10 in. deep. The gas was then obtained from that hole, and enormous quantities of hydrogen were found. He followed up the matter by testing cast-iron. He found here also enormous quantities of hydrogen. He took it further to get a large forging made under a heavy steam hammer, to see if there was gas in wrought-iron, and from that he got similar results. With that great quantity of hydrogen he thought there was something wrong in the testing. The ingot before it was drilled was put back into the tank, and the cutting edge taken off the drill. That drill was allowed to work 24 hours without any cutting edge. At the end of that time the gases were taken off, and enormous quantities of hydrogen were exhibited, and no steel drilled, showing that the hydrogen was obtained by the decomposition of water. He then tried some similar ingots, and in a bath of quicksilver the hole was made and the hydrogen disappeared. He should be glad to know by what method Mr. Pourcel had worked to prevent a similar error. As to the question of solid steel castings they had been made for more than a dozen years at Wolsingham with silico-manganese iron. That iron was turned into a gas furnace at the commencement of the operation, and no doubt the solid steel castings were produced in that manner. It was an accidental discovery, but it was not known for a considerable time. It was due to Mr. Pourcel to say that they were indebted to him for the clearer knowledge they now possessed on the subject.

Mr. Snelus thought the subject which Mr. Pourcel had been working at so hard and so long was one of the most important which steel makers had to deal with. Those who had the charge of the Bessemer operations in manufacturing the steel knew too well the difficulties of producing sound steel. He had for some time past been trying his best to get the Bessemer steel at the West Cumberland Works to lie solid in the moulds. All those who were acquainted with the Bessemer operation knew that very often the steel would lie perfectly dead in the mould, and at other times only persuasion would prevent it boiling over. The only way was to wedge it down, but often with soft steel wedging was not sufficient. At other times the steel would lie as dead and solid in the mould as possible. Not only was there trouble when the steel boiled over, but the steel which would boil over was very much more honeycombed, and produced more unsound rails than that which lay dead. He had known Mr. Pourcel's process, but had not yet been able to use it for the making of rail ingots. He had succeeded well enough in making solid steel castings. Mr. Pourcel's theory that with the presence of silico-manganese the carbide of iron did not suffer any decomposition was perfectly right, but there was one point which he had not touched upon, and that was that the fluid steel contained carbonic oxide in the shape of gas. They blew air into the Bessemer converter, and they produced enormous volumes of carbonic oxide; that gas was dissolved in the steel undoubtedly. He felt quite certain that that was the fact, and that carbonic oxide was dissolved in the steel. He was glad to hear Mr. Richards's explanation of the experiments he made, which threw some light upon Müller's discovery of hydrogen. He never was more astonished when he read and was given to understand that the blow-holes were owing to hydrogen, and he questioned the truth of the experiments at the time; and he was pleased that Mr. Richards had put it to a thorough test, and found that the hydrogen came from the water. That was satisfactory in removing one difficulty. If they could find the carbonic oxide which caused the blow-holes, which he believed was really in solution in the steel, or only produced by the reaction of the carbide of iron and the oxide of iron, they should gain a step in getting sound steel. There was very little difficulty except with ferro-silicon and manganese; but there was a difficulty in the Bessemer process of making sound steel ingots, and that difficulty led to enormous waste in their manufacturing operations.

Mr. Webb (of the North-Western Engineering Works) said they had been lately making a large number of steel castings, and they were making locomotive driving wheels precisely in the same form as with the wrought-iron, with the balance weights all cast in. He had got those sound by casting the locomotive wheels on turn-tables. When he started to run the wheel he ran it in the centre, and he revolved the table very slowly. He got up before he finished the wheel from 40 to 50 revolutions in the minute, till he had run his mould full of steel, and gradually lowered it down again when the mould was full; and in that way he got perfectly sound wheels, and he got them as clean as iron castings could be. He made his castings out of a Siemens-Martin furnace, and he used a pig rather rich in silicon, which he had from Dowlais. But they were getting ferro-manganese with a little more silicon, and he still saw that he should be able to make better castings. If any of the members of the Institute desired to see what they were doing he would be happy to show them.

Prof. Roberts had always viewed with suspicion the experiments by Dr. Müller, and it seemed to him that if hydrogen were really derived from the iron it was probably not because the gas was occluded from the metal, but that the gas was released from blow-holes. The only way to answer the question raised by Mr. Snelus would consist in treating the metal in vacuo, and not by drilling and collecting the gas which was then given off.

Prof. Wedding wished to add some facts which would clear up the effect of silicium. Some synthetical trials had been made, and the result was that if they put together silicium and carbonic oxide in pure iron it became carbonic oxide altogether, and they got a silicate of iron and carbon which united in the whole quantity with iron as long as the iron was not saturated with carbon, or as long as there was no free carbon, as for instance in the blast furnace. They all knew the enormous influence silicium had on strength. It was not easy to make a dense steel, or to have a blistered steel in consequence of the tensile strength required. All these things just now made Mr. Krupp to condense the steel by carbonic oxide, which would be for certain purposes very good, and it was better for other purposes to have the blisters in the steel.

The Chairman congratulated the members on the pleasure they had derived from listening to such an able paper as that by Mr. Pourcel. Now that ironmasters had recognised the important modification which the presence of a very small quantity of foreign matter was capable of exercising upon the quality of the metal impregnated with this foreign matter, they could not doubt that the precise nature of this influence would be very speedily solved. They would be greatly assisted in these investigations when men like Mr. Pourcel and Dr. Wedding, and his old friend Prof. Tunner lent their assistance to ironmasters in endeavouring to ascertain the precise nature of that influence. The ironmasters had no alternative. They knew from positive experience that one part in 2000 is quite sufficient to make the difference between a steel which would fulfil all the objects required of it and a steel which was perfectly useless. They hoped to be able to compel hydrogen and carbonic oxide, and any other foreign matter to give a good account of themselves, or else they would take the liberty of dispensing with their presence.

Mr. James Kitson (of Leeds) here took the chair in the place of Mr. I. Lowthian Bell, who read his paper on Comparative Blast Furnace Practice, in the discussion upon which Prof. Tunner and Messrs. Whitwell and Kitson took part.

Mr. Whitwell said he was sure they all looked forward with very great interest to their visit to the charcoal district. So far as America was concerned, from what he had heard from his agents, it seemed they were making something like 60 tons per day from charcoal furnaces, 53 ft. high by 12 ft. in diameter. It might be advantageous for the Americans to turn out these large quantities, as their profits in good times were large, so that they could drive their furnaces at double the speed of any they had in Europe, and then they could stop them for three or four months for repairs. It was their practice in England to adopt that which was most economical, both with regard to the wear and tear of the furnace and the consumption in the furnace; and there was an economical point in the working of every industrial furnace which they wished to arrive at. In order to compare the statistics given by Mr. Bell, they must know all the material about blast-furnaces. There were elements of ore, of fuel, of flux, and of temperature, and until they had exactly similar circumstances they could not exactly compare the results. They all knew how curious was the working of the blast-furnace, sometimes how contradictory, but given the same circumstances then alone could they compare them.

Mr. James Kitson (who was in the chair) said it was satisfactory to those who had the highest quality of material and who required charcoal iron, and found it of so much service in the manufacture of high qualities of wrought-iron, to hear that charcoal pig-iron with so low a consumption of fuel as 12 cwts., and it was of great importance to those manufacturing the high qualities of steel from the open-hearth furnace to see that there was still a possibility of a continuous supply of Swedish iron, or other charcoal irons at a reasonable price. He concluded by proposing a hearty vote of thanks to Mr. Bell.

Mr. I. L. Bell acknowledged the compliment, and Mr. Snelus then read his paper, the discussion of which was to be taken in London.

Mr. Gjers next read his paper on the Soaking Pit Process, in the discussion upon which Mr. Snelus said that Mr. Wilson certainly did patent a plan of trying to keep the heat in the ingots by covering them in charcoal. They were simple and crude plans, and they amounted to nothing, whereas Mr. Gjers' process meant a great deal; and he (Mr. Snelus) was now carrying out the process at West Cumberland. To say that Mr. Gjers' process was not of much value was incorrect, for it was of very great value. He was sorry that the process was too young to give details, but he might say that they used six fresh heating furnaces at West Cumberland, but with this process last week they only used two, and really did not want more than one to heat any ingots that went cold. They would agree that there was a great saving. Of course the men would have to learn how to use the pits just as they had to learn the furnace, and it was quite possible to spoil an ingot in a pit as in a furnace; but he was quite sure that there was less chance of spoiling it in a pit than in a furnace. The men must become accustomed to the work. The Bessemer pits were at some distance from the cogging. They had to carry each ingot separately, for it had to be thrown down on the ground, lifted up with the crane at the soaking pit, dropped into the pit and kept there for 20 minutes or half an hour, and then taken out and put into a special bogey, whereby the ingot stood upright, and it was entered at the end of the bogey, and the man ran at a distance and tipped it over on to the rolls. They could not carry the plan to the best advantage; but that crude way of doing it answered well enough, and last week they rolled off 1500 tons of ingots, and on Friday night 170 tons, or nearly 2000 tons per week. He had no doubt they would do better if they did not get 2000 tons next week, and if 90 per cent. did not go through the pits he should be very much disappointed. The ingots could be spoiled by taking them out too soon, and taking the fluid steel out at the end. Again, the cuts might be carelessly worked, and an ingot might be made

too hot on one side and too cold on the other, but these were little things, and although it had been working so short a time his manager was thoroughly satisfied with it.

Mr. WINDSOR RICHARDS observed that he could not speak from his own experience of the working of these ingots, but he had been to the Darlington Steelworks on two occasions, and he was surprised at the result.

Mr. SNELUS explained that at West Cumberland they had not adopted the plan of rolling off at one heat, as the arrangement of their mill did not admit of it.

Mr. COOPER said that through the kindness of Mr. Gjers he was allowed to see the process for utilising the whole heat of ingots in its first stage. This consisted of making a series of six square pits under a small crane in the Bessemer shop, the Bessemer shop being some 200 ft. from the cogging mill. At his visit he saw upwards of a dozen ingots put into these pits, and they were allowed to remain from 15 to 20 minutes. They were afterwards bogeyed to the cogging mill, and rolled off into blooms in a satisfactory manner.

Mr. GJERS said it was understood that this process could be applied to blooming at any existing Bessemer works, but those works could not do the rolling off unless they had the necessary machinery. Mr. Head had asked why the workmen put a small piece of coal in the furnace. Well, it did happen that the workmen did put a small piece of coal in the pit, and for this reason, that sometimes these pits actually got inconveniently hot, and in that case they put a piece of coal in for the purpose of cooling it. He could assure the gentleman that there was no fear of not getting heat enough, for it required the best fire-bricks to stand the heat. Every ingot had surface heat which must go to the brickwork, and the pits got additional heat. He himself did not fear at all but that there would be a rolling off direct.

Mr. Massick's paper on a New Hot Blast Fire-brick Stove was taken as read; and

The CHAIRMAN announced that that concluded the ordinary business of the meeting. They had now a little extraordinary business to consider—extraordinary, because it would require their very cordial co-operation in carrying it out. The Chairman then proceeded to read out motions for votes of thanks to the Stadtholder of Lower Austria and the Mayor of Vienna for the courtesy of the reception extended by them to the Institute on behalf of the Government and the municipal authorities; to the Local Reception Committee of Vienna; to the municipal committees in Buda-Pesth, Leoben, and Graz; to the various railway authorities in Austria who had given the members facilities for travelling; to the various ironmasters and others from whom the invitation emanated; and to the Society of Engineers and Architects for their friendly reception.

Baron WESE, President of the Danube Regulation Commission, in describing the works on the Danube on Thursday, explained the reason for the regulation of the Danube, which made formerly at Vienna four curves, and the whole country adjoining the river was exposed to inundations, principally in the beginning of spring, when the ice began to break up. The ice floes blocking up the river, the water was stowed back, and the whole neighbourhood placed under water. Moreover, the level of the water varied between a menacing height at the time of the inundations and great shallowness during the heat of the summer. From several projects there was selected a plan by which a new regulated bed was dug for the stream, its length being 2100 metres by 300 metres broad, and 3-5th metres depth. An opening was practiculated by which the stream entered this new bed, the old one was to the greater part filled up. For yearly inundations a waste part of country was reserved, which is separated by an elevation of earth which insure the surrounding country from the spreading of the river. The regulation of the Danube has proved itself to be a most useful work in all respects. The continuation of this really grand work is to be a channel uniting the Danube with the Oder, bringing thus together the northern seas with the Black Sea, a great project of the highest importance, not only for the traffic of Austria, but for the traffic of Europe.

The meeting concluded by a very cordial vote of thanks being passed to the Chairman, on the motion of Prof. Tunner, seconded by Mr. Windsor Richards.

THE LAW OF STOCKBROKERS.

To the great majority of capitalists the habits and customs of stockbrokers and sharedealers, and the laws of stock dealing, are unfathomable mysteries, and as it is not always to the advantage of those competent to give reliable information to unveil them, comparatively little has been done to remove that impression. Yet stockbroking, stockjobbing, and stock exchanges in England, America, and France are not only controlled by the common law of the respective countries, but are subject to internal laws, which are generally, to some extent, recognised by the more formally constituted tribunals in cases of dispute; it is therefore not surprising that Mr. Dos Passos has been able to find material for a valuable and extremely interesting volume—"A Treatise on the Law of Stockbrokers and Stock Exchanges." By John R. Dos Passos, of the New York Bar. London: Sampson Low, Marston, Searle, and Rivington, Fleet-street—in treating of the law and history of the subject. It has been roughly computed that on the New York Stock Exchange the sales of stock in 1881 reached $12,816,246,600, and Mr. Dos Passos very truly remarks that when the aggregate transactions for the same period of the London Stock Exchange, the Paris Bourse, and the other well-known bourses of the Continent are added, it will be seen at a glance that the capital required yearly to represent the business of dealing in stocks and other securities, reaches figures which are simply too vast for human comprehension to grasp, and no matter how true it may have been a few years ago that the operations on the stock exchanges were of interest merely to the professional speculator to-day, the dealings of these bodies are of national and absorbing importance.

A large number of people have become investors in securities and real estate, at one time the sole source of investment, has in this respect fallen into a secondary rank behind railroad and other commercial companies, which offer attractive and regular returns to capital. As a result of this condition of affairs stock exchanges have become of incontestable value to the public. In the first place all securities which have been admitted to their lists can as a general rule be readily converted into cash. Irrespective of the regular investors and of the professional operators outside of the exchanges (factors of the greatest magnitude in stock dealings), there is a trading element inside of those bodies—jobbers or scalpers—which is ready at a moment's notice to deal in and pay for any number of shares that may be offered for sale, and which in times of exciting panics constitutes the breakwater against great financial disasters. At various times within the last century and a half the legislatures of different countries and states, acting under a spasmodic public sentiment, have sought to prevent speculations in securities and stocks by enacting stringent and severe laws against such practices, but such laws have been vain and futile; they have been openly and persistently defied, and at length, with several exceptions, have been repealed; and it is not too much to affirm that at this day, when it is almost impossible to distinguish legitimate investment operations from pernicious speculations, the subject is beyond legislative prevention. The evil of excessive speculation, Mr. Dos Passos adds, carries its own corrective; the blow falls upon its own authors rather than on the general community, and although prices or quotations may be affected or distorted by these gambling transactions to the temporary inconvenience of the legitimate investor, the inevitable laws of true value will assert themselves again and the tide flow on in its regular channel.

Although professedly a legal work, it is by no means of that dry and technical character which one is accustomed to expect in a law book. Cases are quoted in support of the rules stated, and the readable style of the book is not interfered with. By way of introduction the origin of stockbrokers and stock exchanges is detailed, and there are then chapters on the legal nature of stock exchanges, the character and incidents of membership therein, and the rules and regulations thereof; on the analysis of transactions between broker and client upon purchase for the sale of stocks on the London Stock Exchange; on the Paris Bourse; on the usage of stockbrokers; on stock jobbing; on negociability and non-negociability; on remedies; and on the measure of damages. Various laws and codes of rules and regulations are given in the appendix, and there is an excellent index. The history of the Paris Bourse is particularly interesting. There are but 60 agents de change or stockbrokers in Paris, each of whom has to lodge 10,000*l.* as caution-money with the syndics, who reimburse clients whom he has unfairly dealt with. Upon suspension or withdrawal the agent de change (or broker) has the right to present the name of his successor, and thus practically sell his "seat." Expulsion alone deprives him of this right. In case of the broker's failure the creditors are entitled to present the name of his successor, and if the latter be approved by the Bourse, and confirmed by the Government, it is to him the creditors must look for indemnification. In case of the broker's death the heirs or creditors sell the seat in the same way. The commissions of the agents de change are fixed by the Chambre Syndicate at 1s. for every 40*l.* nominal value. When in the same Bourse the client makes a sale and a purchase only one commission is charged—that upon the largest capital employed, which is called "arbitrage," and the other is made "franco." The transactions on the French Bourse are either for money or for the account, and in respect to the settlement or adjustment of the contracts do not substantially vary from the course of the London Stock Exchange.

But it must not be supposed from these references to matters of interest to the general reader that Mr. Dos Passos's work is wanting in completeness or legal accuracy; on the contrary, it will be found that every important point bearing upon the law of the subject is fully and fairly discussed. The author appears to have spared no pains in consulting both legal and other authorities, European and American, and, as a result, has produced a volume which will be widely esteemed as a work of reference. The outlines of the leading cases taken as basis for the statements made are given in the notes, and in matters of dispute it will be seldom indeed that the professional man will fail to see at a glance whether the decisions already given are in his favour or otherwise. To the general reader the volume will be interesting; to the lawyer or stockbroker indispensable.

THE COAL TRADE.

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coals into and from the port and district of London, by sea, railway, and canal, during September, 1882:—

IMPORTS.

By Sea.	Ships.	Tons.
Newcastle	166	167,694
Sunderland	100	53,560
Seaham	20	12,655
Hartlepool	43	18,215
Middlesborough	1	403
Blyth	—	—
Scotch	14	5,938
Welsh	17	16,092
Yorkshire	19	3,266
Cumberland	—	—
Small coal	15	2,909
Cinders	1	96
Colonial	—	—
Total	401	310,828
Imports—Sept., 1881	421	312,572

By Railway and Canal.	Tons	cwt.
Lond. & North-Western	139,463	18
Great Northern	86,074	0
Great Western	80,228	0
Midland	199,170	0
Great Eastern	71,123	13
South-Western	5,506	4
London, Chat., & Dover	—	—
London, Til., & South.	—	—
South-Eastern	2,401	12
London, Brighton, &c.	—	—
Grand Junction Canal	541	10
Total	584,508	17
Imports—Sept., 1881	612,114	11

Comparative Statement, 1881 *and* 1882.

By Sea.	Ships.	Tons.
Jan. 1 to Sept. 30, 1882	3710	2,719,058
Jan. 1 to Sept. 30, 1881	3739	2,704,372
Decrease—1882	29	In. 14,686

By Railway and Canal.	Tons	cwt.
Jan. 1 to Sept. 30, 1881	4,815,711	4
Jan. 1 to Sept. 30, 1882	4,678,258	11
Decrease—1882	137,452	13

EXPORTS.

Railway-borne coal passing "in transitu" through district	Tons	112,474
Sea-borne coal exported to British Possessions, or to foreign parts, or to the coast	40,483	
Ditto sent beyond limits by railway	13,837	
Ditto by canal and inland navigation	698 =	54,818
Railway-borne coal exported to British Possessions, or to foreign parts, or the coast	41,183	
Ditto by rail beyond district	83	
Ditto, by canal and inland navigation	27 =	41,298
Sea-borne coal brought into port, & exported in same ships		3,606
Total quantity of coal conveyed beyond limits of coal duty district during September, 1882		212,196
Ditto, during September, 1881		233,755

Comparative Statement, 1881 *and* 1882.

Total distribution of coal from Jan. 1 to Sept. 30, 1882		1,976,926
Total distribution of coal from Jan. 1 to Sept. 30, 1881		1,962,245
Decrease in the present year		14,681

General Statement, 1881 *and* 1882.

Decrease in coals imported by railway	137,452	
Less increase in coals imported by sea	14,686	= 122,766
Less decrease in coals exported		14,631
Total decrease in trade within the London district		108,035

THE COPPER TRADE.

Messrs. HENRY R. MERTON and Co. (Leadenhall-street, Sept. 30), issue the following Statistics of Copper:—

	Tons
Stocks in Europe:—	
Chili bars, Liverpool and Swansea	20,067
Chili ingots, Liverpool and Swansea	650
Chili ores and regulus, Liverpool and Swansea (fine)	1,843
Other furnace stuff, Liverpool and Swansea (fine)	1,936
London, Foreign copper (chiefly Australian) and Landing	7,092
Chili bars, ingots and Barilla in Havre	2,714
Other copper in Havre	275
Afloat, and chartered from Chili to Europe (advised by mail):	
Ores and regulus (fine)	2,970
Bars and ingots	4,670
By cable, ores and regulus (fine)	100
Bars and ingots	3,600
Afloat from Australia to Europe (advised by mail):	
Fine copper	528
By cable: Fine copper	500
Total	46,945

Price of Chili bars, 71*l.* per ton.

Messrs. HARRINGTON, HORAN, and Co. (Liverpool, Sept. 29).—Chili copper charters up to 16th were advised on the 18th inst. as 1500 tons fine, of which 800 tons bars and ingots, together with 100 tons furnace material, are for England and 600 tons bars for Continent. Price of bars was 819 15, and exchange 3s¼d. Chili copper market has been very animated since the issue of our last report on the 15th inst., and prices have advanced from 68*l.* 5s. to 70*l.* 15s. for gobs on the spot, 69*l.* to 71*l.* 15s. for gobs to arrive, or with three months' prompt guaranteed, and from 70*l.* to 72*l.* per ton for fine brands. To-day there are sellers of spot bars at 71*l.* and arrival bars at 72*l.* per ton without much demand at those rates. The unsold balance of Russian Altai ingot copper, about 500 tons, was yesterday disposed of for consumption here at 71*l.* 15s. per ton. The sales of furnace material comprise—Liverpool: 748 tons Chili regulus at 14s. 3d.; 1000 tons Ruby Quebrada ore at 14s., 300 tons Betts Cove ore at 13s. 9d., and 700 tons arrival Seville ore about 6 per cent. produce at 13s. 6d.—Swansea: 1100 tons yellow Quebrada ore to arrive at 13s. 9d., and 400 tons Cape ore at 14s. 3d.—Precipitate: 290 tons Mason's Spanish at 14s. 1¼d. to 14s. 3d., about 100 tons English at 14s. 3d. to 14s. 6d., 350 tons Rio Tinto at 14s. 3d. to 14s. 6d., and 50 tons Seville precipitate at 14s. 3d. per unit. Import of Chili copper during the past fortnight 1154 tons fine, against 2735 tons fine same time last year; delivery 1214 tons fine, against 2175 tons fine same time last year. Import of other copper during the past fortnight 838 tons fine, against 1130 tons fine same time last year; delivery 590 tons fine, against 777 tons fine same time last year. Arrivals here during the fortnight of West Coast, S.A., produce:—Galicia, from Valparaiso, &c., 400 tons bars, 230 tons ingots; Ecuador, from Valparaiso *viâ* Havre, 50 tons bars; Beniaf, from Valparaiso *viâ* Havre, 200 tons bars. At Swansea, Lord Marmion, from Tocopilla, 226 tons ores, 509 tons regulus. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	—	455	14,242	472	—
Swansea	226	3,540	5,825	178	—
Total	226	3,995	20,067	650	—

Representing about 22,560 tons fine copper, against 22,620 tons 15th inst.; 28,948 tons Sept. 30, 1881; 33,584 tons Sept. 30, 1880; 30,584 tons Sept. 30, 1879. Stock of copper contained in other foreign ore and Spanish precipitate, 1938 tons fine, against 893 tons Sept. 30, 1881. Stock of Chili bars and ingots in Havre, 2680 tons fine, against 5258 tons Sept. 30, 1881. Stock of Coro Coro Barilla in Havre, 45 tons fine, against 345 tons Sept. 30, 1881. Stock of copper other than Chili in Havre, 275 tons fine, against 1105 tons Sept. 30, 1881. Stock of Chili copper afloat and chartered for to date, 11,248 tons fine, against 8000 tons Sept. 30, 1881. Stock of foreign copper in London, chiefly Australian, 7446 tons fine, against 8648 tons Sept. 30, 1881.

Messrs. RICHARDSON and Co. (Sept. 30).—The stocks of foreign copper produce remaining unsold at Swansea are:—Chilian ore 228 tons, regulus 3540 tons, copper 6003 tons; Cape ore 2695 tons; New Quebrada ore 837 tons; Newfoundland—Betts Cove ore 1786 tons, regulus 99 tons; ditto Tilt Cove, ore 310 tons: French ore 315 tons; Spanish ore 870 tons, precipitate 610 tons; British ore 124 tons; total, ore 6563 tons, regulus 3639 tons, copper 6003 tons, precipitate 610 tons. These totals represent about 9400 tons fine copper. The private sales reported are:—645 tons Cueva de la Mora precipitate at 14s. 55 tons of lower produce at 13s. 9d., and 52 tons of Alustrel at 14s.; 137 tons Rio Tinto regulus at 14s., and 84 tons of precipitate at 14s. 6d.; 114 tons Tanybwlch ore at 13s. 6d.; 1100 tons New Quebrada ore at 13s. 9d.; and 400 tons Cape ore at 14s. 3d. per unit. The Chili charters advised on Sept. 15 for three weeks previous were 1500 tons pure—800 tons being in bars and ingots, 100 tons pure in ores and regulus for England, and 600 tons bars to order for here or France; this moderate quantity increased the prevailing firmness of the copper market, since which values have improved, and at the present moment the market closes firm.

Messrs. JAS. LEWIS and SON (Oct. 2).—Chili bars have improved in value 3*l.* 5s. per ton during the month. Opening at 67*l.* 10s., an advance of 15s. was established by the 6th ult.; 5s of this was then lost, but after the market had remained quiet for some days it recovered to 68*l.* 10s. by Sept. 15, the deliveries of copper from stock made up on that day proving large. On Sept. 18 the charters for the previous three weeks were advised as only 1500 tons fine, the cost in Valparaiso being equal to the prices ruling here without commission on either side. The quantity of bar copper offering, both on the spot and to arrive, being very limited and a good consumptive demand springing up, a gradual and almost daily advance took place. The charters for the past fortnight are advised to-day as 600 tons fine, all bars, of which 50 tons are for the Continent. On Sept. 27 500 tons of Russian Altai ingot copper was sold for England at 71*l.* 15s. per ton. The stocks of Chili produce are—Liverpool, bars, 14,242 tons; ingots, 472 tons; regulus, 455 tons. Swansea—Bars, 5825 tons; ingots, 178 tons; regulus, 3540 tons; ore, 226 tons: total, bars, 20,067 tons; ingots, 650 tons; regulus, 3995 tons, ore, 226 tons, equal to 22,560 tons fine, against 23,140 tons on Sept. 1, and against 28,948 tons from Oct. 1, 1881, when quotations were—bars, 62*l.* 15s.; ore, 12s. 9d. The stocks of other than Chili produce are:—Liverpool and Swansea, 1936 tons fine, against 2457 tons at the beginning of Sept. 1, and 883 tons on Oct. 1, 1881; London, 7134 tons fine, against 7335 tons at the beginning of Sept. 1, and 8646 tons on Oct. 1, 1881. Havre (Chili, &c.), 2965 tons fine, against 3555 tons at the beginning of Sept. 1, and 5821 tons Oct. 1, 1881: total, 12,035 tons fine, against 13,347 tons at the beginning of Sept. 1, and 15,350 tons on Oct. 1, 1881. The total visible supply is 47,754 tons fine, against 51,430 tons at the beginning of Sept. 1, and 56,625 tons on Oct. 1.

THE TIN TRADE.

Messrs. STRAUSS and Co. (London, Sept. 30) issue the following Statistics of Tin:—

	Aug. 31, 1882.	Sept. 30, 1882.	Sept. 30, 1881.
Straits and Australian, spot.....Tons	6,196	5,312	6,558
,, ,, landing	170	167	138
Straits, afloat	100	250	225
Australian afloat	855	1,225	1,442
Banca, on warrants	933	1,357	1,150
Billiton, spot	1,747	1,872	1,385
,, afloat	885	580	810
Australian tin in Holland	10	29	—
Stocks in America, including quantity afloat	3,830	3,870	3,400
Total	14,731	14,662	15,078
Prices of Straits and Australian	£101 10	£107 5	£95 5
Deliveries during month in London	1,325	1,269	1,549
,, ,, ,, Holland	569	510	725
Total	1,894	1,779	2,274

Shipments during the month from Straits to London 150 tons, from Australia to London 800 tons, from Straits to America 825 tons, from Australia to America 150 tons. Banca in Trading Company's hands and afloat, 2235 tons.

THE MECHANICAL PROPERTIES OF ALUMINIUM.*

BY W. H. BARLOW, F.R.S.

Having had occasion to use aluminium in the construction of instruments adapted for special purposes, and having observed that it possessed a remarkable degree of strength, in proportion to its weight, and a large range of elastic action, it appeared to me desirable to ascertain more fully the mechanical properties of this metal. With this object, a bar of aluminium, 3 ft. long, and ¾ in. square, was obtained, and different parts of this bar were subjected to test for tension, compression, and transverse strain, and also to ascertain the modulus of elasticity, the elastic range, and ductility. The experiments were carefully carried out for me under the able direction of Prof. Kennedy, with his testing machine, at the London University, and the results are given in the table appended to this paper.

It will be seen, on reference to the results obtained, that the weight of a cubic inch is ·0972 lbs., showing a specific gravity of 2688, and that its ultimate tensile strength is about 12 tons per square inch. The range of elasticity is large, the extension at the yielding point being 1-200 part of its length. The modulus of elasticity is 10,000. The ductility of samples, 2 in. long, was only 2·5 per cent; but it is probable that the metal could be improved in this respect. Taking the tensile strength of this metal, in relation to its weight, it shows a high mechanical value. Its characteristics in this respect, as compared with those of other well-known metals are shown in the following summary:—

	Weight of a cubic foot in lbs.	Tensile strength p. sq. inch in lbs.	Length of bar just capable of bearing its own weight.
Cast-iron	444	16,500	5,351
Bronze	525	36,000	9,893
Wrought-iron	480	50,000	15,000
Steel of 35 tons per inch	490	78,000	23,040
Aluminium	168	26,880	23,040

It thus appears that, taking the strength of aluminium in relation to its weight, it possesses a mechanical value about equal to steel of 35 tons per inch.

Aluminium is, unfortunately, a very expensive metal, and although an increased demand might lead to a considerable reduction in price, yet the process by which it is extracted leaves little hope at present of obtaining it at a rate sufficiently low for general use. But its mechanical properties point to its suitability for those cases where strength, combined with lightness and a great range of elastic action, are required. The elastic range is about three times that of steel, and about five times that of wrought-iron.

In the discussion, Sir H. Bessemer said that experiments had been made, and others were in hand, by which it was expected to obtain a new process, which would very greatly reduce the cost of manufacture. He also produced a door-key, made in aluminium, stating that 40 of such keys would only weigh 1-lb.

It may be added that Sir Wm. Thomson uses aluminium for the rims of his very excellent compasses for ships.

* A paper read before the Mechanical Section of the British Association, at Southampton.

COAL MINING 3000 FEET ABOVE THE SEA.—Among the coal mines rapidly being developed in New Zealand is one situated near the town of Westport, on the west coast of the Middle Island, which is distinguished by two remarkable, if not unique, features—the thickness of its coal seams, which range from 6 ft. to 53 ft. 6 in. in thickness, and the fact that these enormous deposits are placed, and can be easily worked at an altitude of from 800 to 3000 ft. above sea level. Some of these seams are exposed on the faces of the cliffs, and can be got at with the greatest ease by tunnelling. Besides the comparative immunity from ordinary accidents which this remarkable deposition of the coal deposits affords, there is the further advantage that the mines are absolutely safe from floods, and almost, if not quite, secure from the risk of explosion from fire-damp. There is the further advantage that the coal can be loaded on board ship by gravitation, the danger and expense of hauling the coal up a deep perpendicular shaft being entirely avoided, while the full coal trucks can be made to convey themselves down the mountain slope to the harbour, and at the same time haul up the empty trucks along a parallel line of railway on the ingenious system adopted at the celebrated stone quarries at Portland, in Dorsetshire.

CASSELL'S PUBLICATIONS.—Science for All, part 59, contains the conclusion of the paper on the old life of E rope, and articles—Is there Coal under London, by Frederic Drew, F.G.S., assistant master at Eton: on an Iceberg, by Robert Brown, F.R.G.S.; on How an Animal Walks, by William Ackroyd, F.I.C.: on A Clod of Earth, by David Houston; and on the Rise of the Organs of the Sense, by F. J. Bell, M.A. The Life and Work of St. Paul, part 9, extends to the chapter on the Consultation at Jerusalem. Knight's Practical Dictionary of Mechanics, part 70, extends from Slide-rod to Soldering Apparatus, and has a very good historical article on the Smelting Furnace.

Registration of New Companies.

The following joint-stoccompanies have been duly registered —

Wells and Company (Limited).—Capital 100,000*l*., in shares of 10*l*. To acquire the Commercial Ironworks at Shoreditch, and to carry on the business in connection therewith. The subscribers (who take one share each) are—E. Wells, Shoreditch; J. Smith, Green Lanes; H. J. Fenwick, Ponder's End; G. Loly, 10, Eastcheap; V. D. Loly, Derby-road; T. Denton, Brockley; W. S. Oxborrow, Forest Gate.

The Leather Paper Company (Limited).—Capital 25,000*l*., in shares of 5*l*. To acquire and continue a business established at Cleobury Mortimer, Salop. The subscribers are:—C. W. Le Blanc, Barnet, 500; D. L. Davies, Bewdley, 5; J. H. Browne, Cleobury, 2; E. Browne, Cleobury, 2; D. Roberts, Abchurch, 20; A. J, Davies, Liverpool, 40; H. E. Le Blanc, Barnet, 2.

The Lower California Land and Fibre Company (Limited).—Capital 50,000*l*., in shares of 5*l*. Acquiring land, growing, and producing the "Agave Americana," and the conversion of same into fibre for sale or otherwise. The subscribers (who take one share each) are—J. Lewis, Liverpool; A. H. Lewis, Liverpool; J. H. Kenion, Liverpool; J. R. Stewart, Glasgow; P. Thompson, St. Helens; A. W. Bibby, Liverpool; T. Court, Liverpool.

Alexander Gordon and Company (Limited).—Capital 100,000*l*., in shares of 100*l*. To carry on the business of a club-house, inn, tavern, hotel keeper, &c. The subscribers are—A. Gordon, 8, Grosvenor-road, 100; E. H. Bias, 25, Belsize Park, 10; F. Gordon, Bentley Priory, 70; H. L. Hammond, 16, Belsize Park, 10; W. Nightingale, 8, Lonsdale-square, 10; D. H. Gordon, Tottenham, 25; T. J. Hamp, 34, Bloomsbury-square, 10.

The Electro-Amalgamator Company (Limited.) — Capital 20,000*l*., in shares of 100*l*. To acquire, use, sell, or deal in certain patents "for the more profitable extraction of gold and silver by means of electricity." The subscribers (who take one share each) are—H. Beckwith, 96 Palmerston Buildings; W. Tanner, 5, Argyle-road; G. Rudall, Kilburn; H. Beckwith, jun,, Leyton; R. S. Gladstone, Tower Chambers; C. T. Gladstone, the Albany; W. R. May, Malvern-road.

The Gardepee Steamship Company (Limited).—Capital 26,600*l*., in shares of 266*l*. A steamship owner's business in all branches. The subscribers (who take one share each) are—T. Howe, Penarth; J. A. Gibbs, Cardiff; P. Rawle, Forest Hill; W. B. Gibbs, Cardiff; P. Morel, Penarth; R. J. Gibbs, Cardiff; G. Shapland, Cardiff.

The Rhymney Steamship Company (Limited).—Capital 23,000*l*., in shares of 230*l*. Objects and subscribers the same as in the foregoing.

The Pacific Coast Mining Company (Limited). — Capital 10,000*l*., in shares of 1*l*. To carry on mining operations and the business of mining in all branches, and the working, opening, boring for, and raising of minerals and other substances in certain lands situated in the Republic of Nicaragua, or any other lands wherever situate; to make merchantable and sell same, and acquire, work, and develope any mines, mining rights, &c., as the company shall think proper. The subscribers (who take one share each) are—A. Connop, Liverpool, miner; H. G. Tippet, Liverpool, merchant; C. Broadhurst, Liverpool, clerk; T. H. Tippett, Rock Ferry, clerk; J. Greenwood, Liverpool, clerk: H. B. Jackson, Manchester gentleman; F. G. Jackson, Manchester, spinster.

Steamship "Burbrack" Company (Limited).—Capital 22,400*l*., in shares of 330*l*. Purchasing, owning, and working said steamship, The subscribers (who take one share each) are—J. Hoult, Liverpool; G. R. Glover, Birkenhead; E. Finlay, Liverpool; T. W. Robinson, Liverpool; W. Fowler, Liverpool; E. Pyke, Preston; J. Jackson, Preston.

Nenthead and Tynedale Lead and Zinc Company (Limited).—Capital 120,000*l*., in shares of 1*l*. To purchase or otherwise acquire and work mines, quarries, mineral deposits and substances, farms, lands, &c,, in the United Kingdom, and in particular the mines, quarries, and mineral deposits, minerals, mining rights and effects of the "Governor and Company for smelting down lead with pit coal and sea coal," commonly known as the London Lead Company and the Tindale Spelter Company, together with the business of each of the said companies, and the goodwill thereof. To crush, smelt, reduce, amalgamate, prepare, and manufacture minerals of every description for the market, and carry on the usual operations connected therewith. The subscribers are—T. B. Barker, South Shields, 5000; J. C. Swan, Newcastle-on-Tyne, 5000; J. Pattinson, Newcastle-on-Tyne, 5000; J. B, Cranston, Newcastle-on-Tyne, 500; R. S. Watson, Newcastle-on-Tyne, 1000; J. W. Swan, 41, Coleman-street, 5000; J. S. Setton, 78, Hatton Garden 5000.

The Army and Navy Polishing Powder and General Manufacturing Company (Limited).—Capital 10,000*l*., in shares of 1*l*. To purchase and continue a certain business established at 9, Artillery-square, Bishopsgate, E.C. The subscribers (who take one share each) are—J. Ambrose, Tollington Park; F. A. Mass, Holloway; T. W. Miles, Dalston; J. A. Dobson, 8, Banner-road; J. Cann, 1, Crown-court; J. Gibbs, 13, King-street; J. T. Southcott, Peckham.

The Freehold and Leasehold Investment Company (Limited).—Capital 500,000*l*., in shares of 10*l*. The business of a land company in all branches. The subscribers (who take 200 shares each) are—J. C. Scott, 32, Kensington Park-road; T. Boney, Hornsey-lane; G. F. Cox, 22, Ampthill-square; F. G. Baker, Camden-road; W. Parker, Holloway; H. W. Johnson, Camden-road; W. Lewis, 17, Highbury Crescent; W. S. Hoare, 144, Seven Sisters-road; W. Dow, 57, Highbury Hill; G. H. Stone, Canonbury.

The London Joint-Stock Bank is re-registered under the Limited Liability Companies Acts.

The Baisby Basic Company (Limited). — Capital 5200*l*., in shares of 50*l*. To purchase land in Durham, and carry on the business of quarry-owners, lime-burners, brickmakers, basic material and magnesia makers, &c. The subscribers are—S. G. Thomas, Chelsea, 6; F. C. Gilchrist, 172, Palace Chambers, 8; E. Riley, 2, City-road, 3; W. F. Hall, Fence Houses, 5; C. Harting, South Hetton, 5; W. R. Waddingham, Durham, 5; C. Lithman, Sutherland, 5; R. Possner, Stockton-on-Tees, 5.

The Fish Supply Company (Limited)—Capital 30,000*l*., in shares of 5*l*. To acquire and carry on a business established in various parts of London. The subscribers are—T. H. D. Allen, 217, Camden-road, 50; D H. Gibbard, 16, Great Randolph-street, 20; A. Nash, Patshull-road, 20; J. Pemberthy, Royal Veterinary College, 1; D. Morris, 14, Wilton-road, West, 1; W. Clark, 14, Baham-place, 1; E. Richardson, 5, Hatland-grove, 1.

The Prudential Loan and Discount Company (Limited).—Capital 100,000*l*., in shares of 10s. each. To negociate loans of all descriptions, discount bills, promissory notes, make advances, &c. The subscribers (who take one share each) are—H. C. Taylor, 23, Phillimore Gardens; F. T. Poulton, 8, Lambeth Hill; A. Mathews, 42, Upper Baker-street; R. Delatorre, 31, Threadneedle-street; A. J. Poulton, 31, Threadneedle-street; G. Davison, Pimlico; A. E. Silver, Hampton Wick.

Sharpe and Fletcher and Company (Limited).—Capital 120,000*l*., in shares of 1*l*. To carry on the manufacture of sugar, or any other business or enterprise in Fiji. The subscribers (who take one share each) are—J. Dent, jun., Newcastle-on-Tyne; F. Sharp, Lancashire; W. E. Barratt, Kersal; M. M. Speakman, Manchester; R. C. Longridge, Knutsford; W. Fletcher, Manchester; H. G. Janion, Manchester.

The Castle Eden Steamship Company (Limited).—Capital 44,325*l*., in shares of 1*l*. A shipowner's business in all branches. The subscribers (who take 25 shares each) are—A. Thomlinson, Liverpool; G. Thomson, Liverpool; R. Wakeham, Liverpool; W. K Jackson, Liverpool; J. Thomlinson, Liverpool; T. Reay, Carlisle; J. S. Nixon, Liverpool.

The West Callao Gold Mining Company (Limited).—Capital 150,000*l*., in shares of 1*l*. To purchase, or otherwise acquire, land, gold mines, mining rights, or minerals situate in the Republic of Venezuela, or elsewhere, and to adopt and carry into effect an agreement made between J. Thompson of the one part and J. Henry as trustee for the company of the other (this agreement is not registered.) To explore, work, and develope the mineral resources of the properties, and to carry on generally the business of miners, smelters, and reducers of ores, and to vend such ores, minerals, and metals. The subscribers (who take one share each) are—T. Cane, Holloway, accountant; H. G. N. Waters, 54, New Bond-street, gentleman; J. Ferguson, 8, Great Winchester-street, accountant; W. H. Fry, 26, Larcom-street, accountant; G. E. Laverack, West Ham Park, engineer; G. Middlemion, 7, Windermere-road, warehouseman; J. Murphy, 31, Baker-street, merchant. The number of directors must not exceed 10 or be less than three. Qualification 100 shares.

Envelope Machinery Syndicate (Limited).—Capital 6000*l*., in shares of 10*l*,, with power to increase to 20,000*l*. The ordinary business of envelope and stationery manufacturers in all branches. The subscribers (who take one share each) are—T. R. Rollisson, 80, Clapham-road; H. W. Rollisson, Wimbledon; H. Sarl, Acton; T. H. Mackie, Shepherd's Bush; C. C. Merser, 1, Torbay-road; T. M. Aidge, Crouch Hill; J. Quinton, 134, Loughborough Park.

The Bagillt Zinc Smelting Company (Limited).—Capital 30,000*l*.,in shares of 1*l*. To purchase the existing lease of certain works in Flintshire and to continue the business attached thereto. The subscribers are—T. S. Ford, Liverpool, 1000; W. A. Bradley, Flint, 1000; J. Bowman, Liverpool, 1000; A. C. Darby, Liverpool, 1000; B. B. Chadwick, Walton Aintrie, 1000; E. H. Darby, Aintrie, 1000; W. Moreton, Douglas, 200; J. H. Bowman, Fazerkerley, 100.

Shap Fell Steamship Company (Limited).—Capital 9000*l*., in shares of 100*l*. Purchasing, owning, and working said vessel. The subscribers (who take one share each) are—J. Hume, Oxton; H. B. Smith, Chester; W. J. Groome, Orrel; W. H. Fletcher, Liverpool; F. M. Hull, New Brighton; G. S. Harvey, Fairfield; J. W. Steeman, Edinburgh.

The Delcomyn Steamship Owners (Limited).—Capital 27,000*l*., in shares of 42*l*. 3s. 9d. Purchasing, owning, and working said steamship. The subscribers (who take one share each) are—W. Lund, 18, Jewry-street; F. Delcomyn, 5, Trinity-square; E. A. Delcomyn, 5, Trinity-square; D. P. McEwan, 97, Cannon-street; E. Wilson, 5, Adams-court; L. Wiese, 9, Mincing-lane; F. Meeking, 9, Mincing-lane.

The Halifax Districts Tramways Company (Limited).—Capital 100,000*l*., in shares of 5*l*. To construct, maintain, and work tramways in any part of the borough or parish of Halifax. The subscribers (who take one share each) are—A. Arnold, Halifax; J. Bowman, Halifax; W. Ambler, Halifax; J. W. Ward, Halifax; J. Parkinson, Halifax; L. J. Crossley, Halifax; R. Edleston, Sowerby Bridge.

Italian Mines.—A report of the movement in Italian mines during the year 1879 has just been published by the Government. During that year 352 permissions to search for mines were issued in 40 provinces, the greater part of which were not made use of, and only six new mines were discovered, one of sulphur at Ancona, one of manganese at Genoa, one of petroleum and two of zinc at Milan, and one of asphalte at Frosinone. In the other 29 provinces the right to search for mines belongs to the proprietors of the soil. In 1879 556 mines were at work, producing 60,000,000 frs.. and employing 44,000 workmen. The preceding year 556 mines were at work, but they only produced 55,000,000 frs., and employed 40,000 men. In 1879 the production of sulphur was from 305,000 to 376,000 tons, producing 6,000,000 frs. The increase was owing to the improved condition of the mines, the greater quantity of sulphur gained, and the highness of price. More lead was produced—from 36,000 to 41,000 tons—and also zinc was produced in greater quantities; but the price of both of these metals was low. Copper mines suffered not only from the low price, but also from lessened production, which decreased from 22,000 tons the year before to 20,000 tons. In the mines of Elba there was great increase of production, amounting to from 18,000 to 20,000 tons. These mines were worked chiefly for exportation. The silver and gold mines of Sardinia showed great increase in production, yielding a third more than before, but the price was low; 197 kilos. of gold, of the value of 596,000 frs. were produced. Asphalte yielded a value of almost half a million francs, while the year before it had produced scarcely the half of that sum. In spite of the greatest precautions many accidents occurred in 1879, there being 155 cases, of which 76 resulted in death. According to statistics there would seem to have been an enormous increase in accidents during the year just past, but the difference may be attributed to the greater care taken in making cases known. The greatest number of mining accidents occurred in the mining district of Caltanisetta, where there were 50 accidents, 40 of which resulted in death, and the fewest in the mines of Turin, where three accidents occurred, two of which caused death.

THE

Rotary Gold Mill AND Amalgamating Machine

HAS BEEN FULLY PROVED.

It weighs complete 1¼ ton; it costs ready for belt £250; will crush and amalgamate 30 tons a day; the wear is less than in a Stamp Mill; can be set up in 24 hours; and is considered a cheap and effective Machine.

For particulars, apply—

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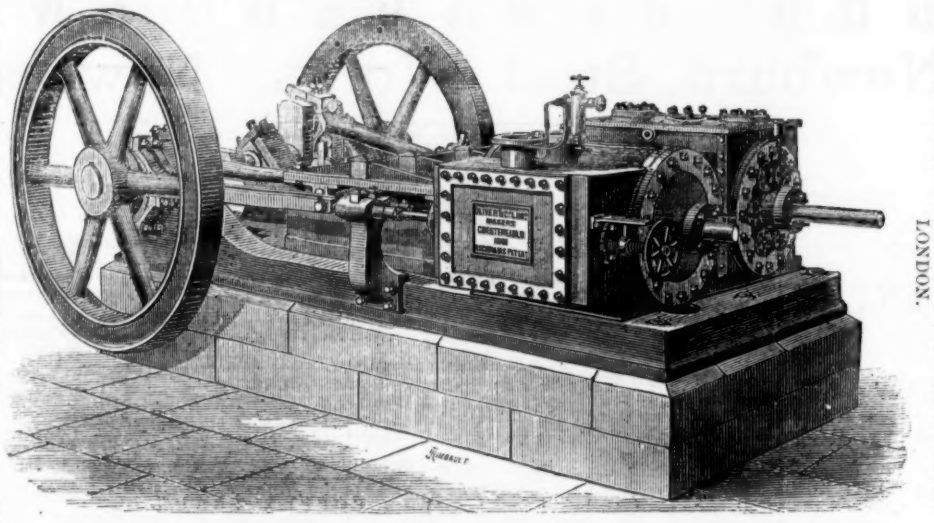

SCHRAM'S PATENT ROCK DRILL AND

Air Compressor.

RICHARD SCHRAM & CO.,

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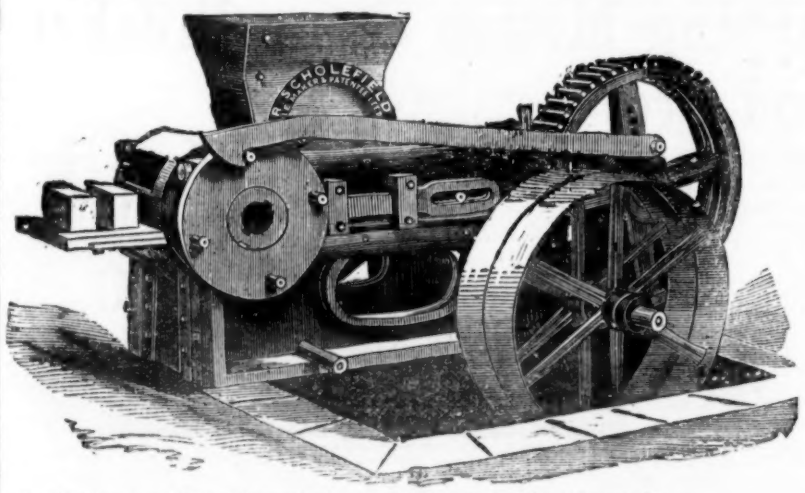
R. SCHOLEFIELD'S

LATEST PATENT BRICK-MAKING MACHINE.



R. S. begs to call the attention of all Colliery Owners in particular to his PATENT SEMI-DRY BRICK MACHINE, and the economical method of making bricks by his patent machinery from the refuse that is taken from the pits during the process of coal-getting, which, instead of storing at the pit's mouth (and making acres of valuable land useless) is at once made into bricks at a very small cost, by R. S.'s Patent Brick-making Machinery. If the material is got from the pit hill, the following is about the cost o

production, and the hands required to make 10,000 pressed bricks per day:—

2 men digging, each 4s. per day	£0 8 6
1 man grinding, 4s. 6d. per day	0 4 0
1 boy taking off bricks from machine, and placing them in barrow ready for the kiln, 2s. per day	0 2 0
1 boy greasing, 1s. 6d. per day	0 1 6
1 engine man, 5s. per day	0 5 0
1 man wheeling bricks from machine to kiln, 4s. per day	0 4 0
Total cost of making 10,000 pressed bricks	£1 5 0, or 2s 3d. per 1000.

(SETTING AND BURNING SAME PRICE AS HAND-MADE BRICKS.)

N.B.—Where the material can be used as it comes from the pit, the cost will be reduced in digging.

As the above Machinery is particularly adapted for the using up of shale, bind, &c., it will be to the advantage of all Colliery Owners to adopt the use of the said Brick-making Machinery.

THE MACHINES CAN BE SEEN IN OPERATION AT THE WORKS OF THE SOLE MAKER AND PATENTEE DAILY.

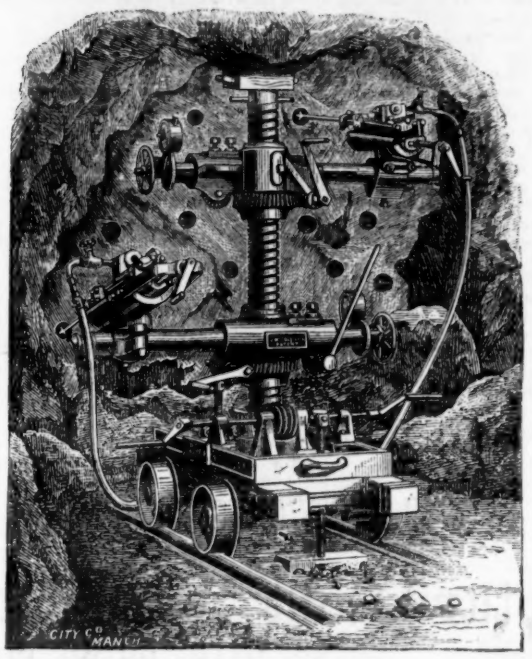
SCHOLEFIELD'S ENGINEERING & PATENT BRICK MACHINE WORKS

KIRKSTAL ROAD, LEEDS.

T. LARMUTH & CO.,

ENGINEERS,

MANCHESTER, ENGLAND.



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STEAM CRANES, OVERHEAD TRAVELLERS,
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TRAVERSERS AND TURNTABLES,

Engineers' Tools of every description.

LLOYD'S FANS,

MINE VENTILATING FANS,

CENTRIFUGAL PUMPS.

MAKERS OF

STURGEON'S NEW

PATENT TRUNK AIR COMPRESSOR

WINDING AND PUMPING ENGINES,

IMPROVED CONDENSING AND NON-CONDENSING HIGH-PRESSURE

STEAM ENGINES,

With Ordinary or Expansion Valves, Compounded on Non-Compounded

SPECIALITIES FOR

LEATHER BELTING MANUFACTURER

SHAFTING, GEARING, AND PULLEYS.

Sole Makers of J. Priestman and Son's Patent Leather Striking Machines.

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Newburn Steel Works, Newcastle-on-Tyne.

STEEL

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FITTED COMPLETE.

INCLINE PULLEYS AND ROLLERS.

STAMP HEADS AND SHOES

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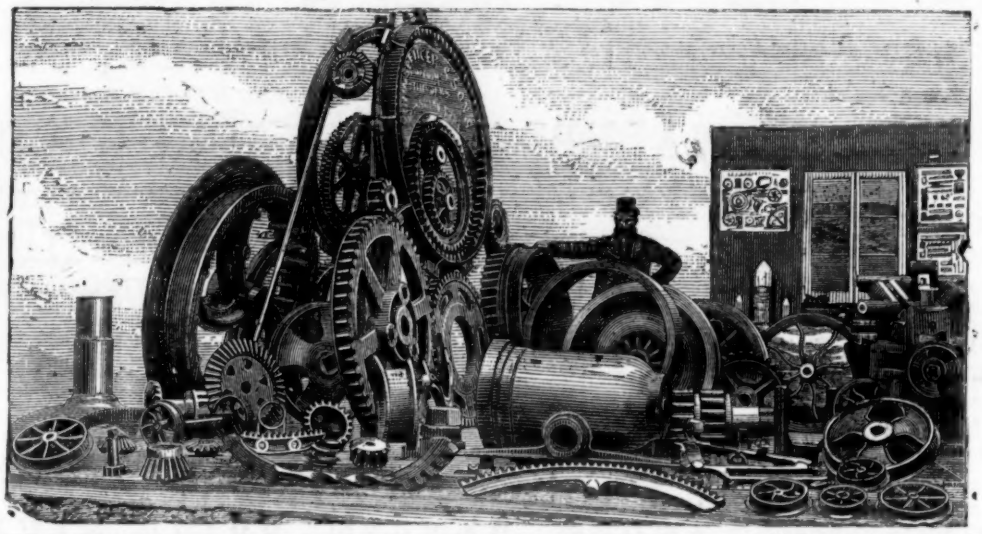

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RAILWAY SPRINGS AND BUFFERS,

JUMPER STEEL,

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BEST CAST STEEL FOR TOOLS.

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The Only Knapping Motion Stone Breaker and Ore Crusher.

AWARDED THE ONLY SILVER MEDAL FOR MECHANICAL EXHIBITS AT THE ROYAL CORNWALL POLYTECHNIC SOCIETY, FALMOUTH, SEPT., 1881.

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The Bold Venture Lime and Stone Co., Peak Forest,
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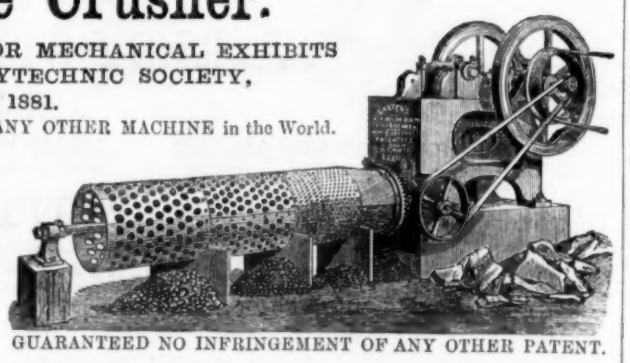
GENTLEMEN,—We have the pleasure to inform you that the 20 by 9 Stone Breaker supplied by you is now working to our entire satisfaction, and we are now able to fulfil our contract with ease, which we had much difficulty in doing before with the Blake Machine. It takes less power and turns out considerably more stone.

Yours truly,

BOLD VENTURE LIME AND STONE COMPANY.



GUARANTEED NO INFRINGEMENT OF ANY OTHER PATENT.

These Machines turn out the same amount of work with less than half the power, and make a better sample of Road Metal, with 50 per cent. less waste than any other machinery, and for Crushing Purposes they are still more advantageous, as the sudden action entirely dispenses with the clogging when used for crushing softer materials, and thereby saves many breakages and a great waste of power. There is also a saving of fully 75 per cent. of lubrication required over the Blake Machine, and as a proof of this, our driving shaft never becomes heated. We are also prepared to guarantee our driving shaft from breakage in any of our Knapping Motion Stone Breakers.

We have already supplied our Machines to Derby, Harrogate, and Falmouth Local Authorities; besides several Quarry Owners, Contractors, Plaster Manufacturers, Mining Companies, &c.

FOR FULL PARTICULARS ADDRESS TO THE PATENTEES AND SOLE MAKERS,

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INCREASED VALUE OF WATER-POWER.

MacADAM'S VARIABLE TURBINE.

This Wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth or even less if required. It is easily coupled to a steam-engine, and in this way always assists it by whatever amount of power the water is capable of giving, and therefore saves so much fuel.

This Turbine is applicable to all heights of fall. It works immersed in the tail-water, so that no part of the fall is lost, and the motion of the Wheel is not affected by floods or back-water.

References to places where it is at work will be given on application to—

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TUBULOUS STEAM BOILER
SAFE ECONOMICAL
EASY TRANSPORT IN MOUNTAINOUS COUNTRIES
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APPLICABLE TO ALL KINDS OF BOILERS & FURNACES
ECONOMICAL AND SMOKE CONSUMING
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THE
EXCELSIOR ROCK DRILL.

The construction of this Drill is remarkably simple. There being ONLY ONE MOVING PART—the piston—it is almost impossible to get out of order. The air is taken in through the gland, and by a peculiar arrangement of ports and passages the motion of the piston automatically admits and cuts off the supply of air to each end of the cylinder.

Its chief advantages are simplicity, durability, strength, and lightness, economy in first cost, consumption of air and repairs, adjustability of cradle and length of feed. Invaluable for use in foreign countries where repairs are so difficult and expensive. The makers undertake to keep the machine in repair entirely free of cost for six months from date of purchase. In order to prove the superiority of these machines, the makers are prepared to send one on trial to any Mining or Tunnelling Company, they being at perfect liberty either to keep it or return it after trial.

For prices, particulars, &c., apply to—

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PATENT DUPLEX LAMPS,

FOR COLLIERIES, IRONWORKS, &c.,
SUITABLE FOR
Pit Banks, Engine-Houses, &c., &c.

Each Lamp gives a light equal to 26 candles.

No breakage of Chimneys from Heat.

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This season special attention has been given to making these LAMPS THOROUGHLY WINDPROOF.

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By a special method of preparation this leather is made solid, perfectly close in texture and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

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LEATHER MILL BAND AND HOSE PIPE MANUFACTURERS,
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Prize Medals, 1851, 1855, 1878, for
MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

LIEBIG'S EXTRACT OF MEAT AND MALT WINE
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A DELICIOUS BEVERAGE AND TONIC

IMPORTANT TESTIMONIAL.

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Dear Sir,—Some time since, being greatly fatigued with overwork and long hours at business, my health (being naturally delicate) became very indifferent. I lost all energy, strength, and appetite, and was so weak as to be scarcely able to walk.

As you are aware, I sent for a dozen of your Extract of Meat and Malt Wine, which, in a few days, pulled me up marvellously. Three or four glasses of it daily have quite altered and restored me to better health than ever, "without the assistance of a doctor."

I am now giving it to my son, twelve years of age, whom we have always thought consumptive, and from a puny ailing boy he seems to be fast growing into a strong healthy lad.

Enclosed you have cheque. Please send me two dozen of the "Extract." With thanks for your prompt attention to my last

I am Sir, yours truly,
GEORGE A. TYLER.

Pints, 30s.; Quarts, 50s. per dozen. Carriage Paid to any Railway Station. Sample Bottle sent for 33 stamps

Post-Office Orders and Cheques payable to—
COLEMAN AND CO.,
MUSPOLE STREET, NORWICH.

Sold by all Druggists in Bottles 2s. 9d. and 4s. 6d. each. Ask for Coleman's Liebig's Extract of Meat and Malt Wine, and "See that you get it."

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GRATIS, free by post on receipt of Two Stamps to pay Postage
THE BOOK OF POSITIVE REMEDIES.—
It is the Book of Positive Medicine for the Cure of certain forms of Debility and Nervousness—viz: Mental and Physical Depression, Palpitation of the Heart Noises in the Head and Ears, Impaired Sight and Memory, Indigestion, Pains in the Back, Headache, Piles, Constipation, Hysteria, Dizziness, Local Weakness, Muscular Relaxation, Nervous Irritability, Blushing, &c., resulting from Exhaustion of Nerve power, effect of Overwork, City Life, Worry, Brain Toil Intemperance and other abuses of the system.

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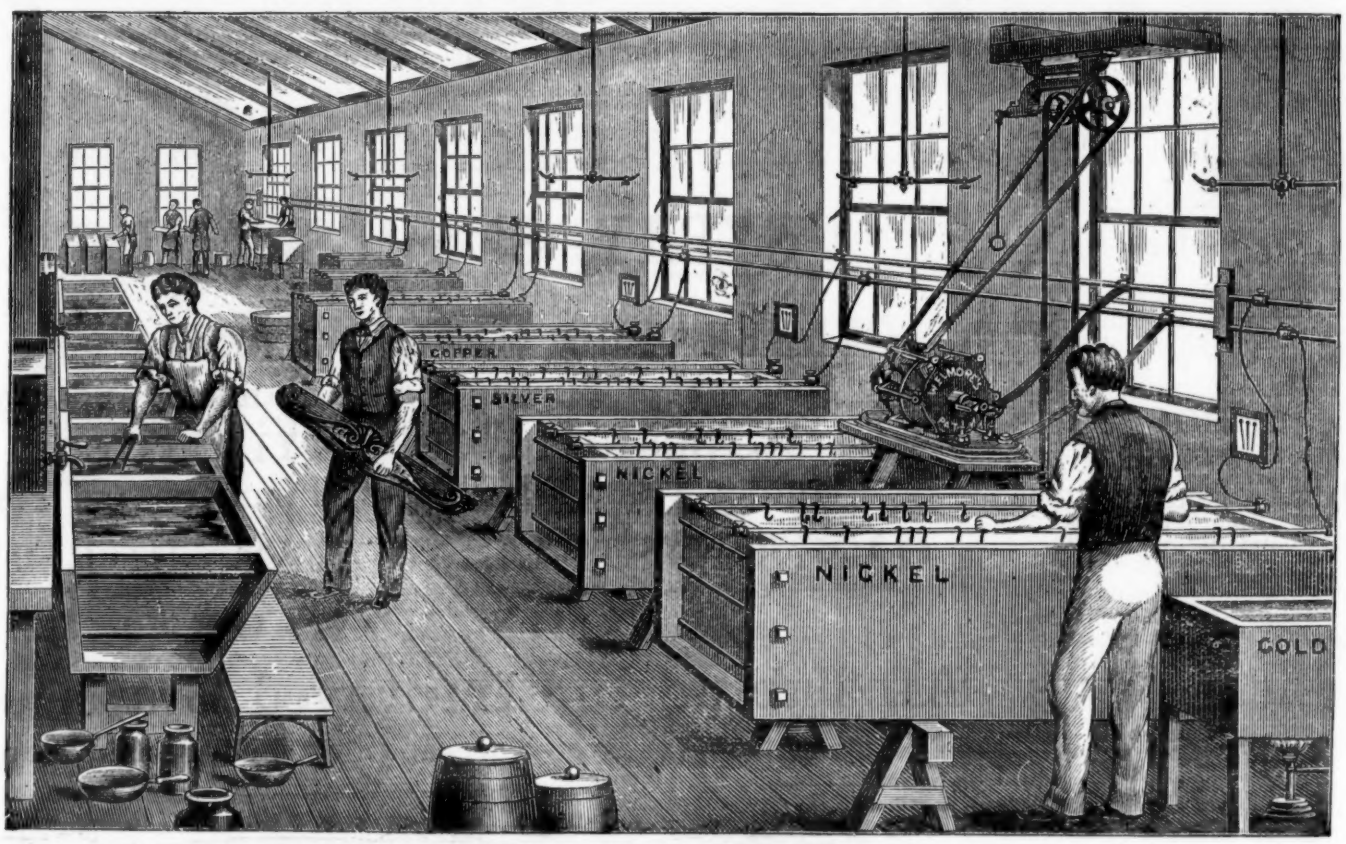

The above represents an Electro-Plating Works in which an "ELMORE" PATENT DYNAMO-ELECTRIC MACHINE is being used for the simultaneous deposition of Nickel, Silver, Copper, Bronze, Brass, Gold, Tin, Zinc, &c., from their Solutions.

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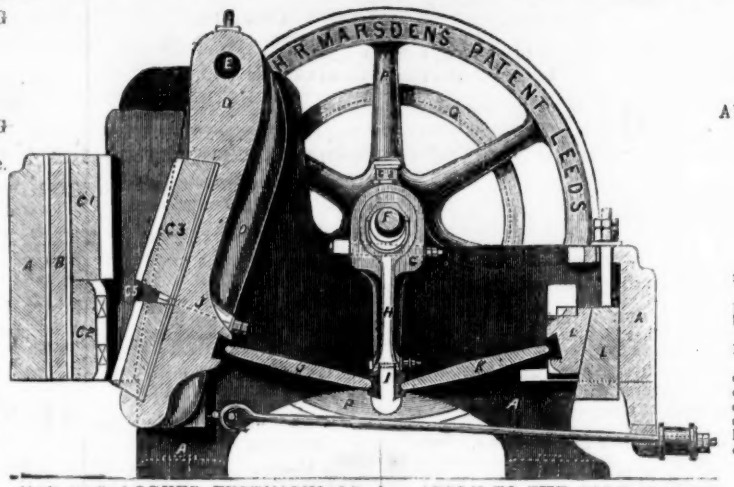

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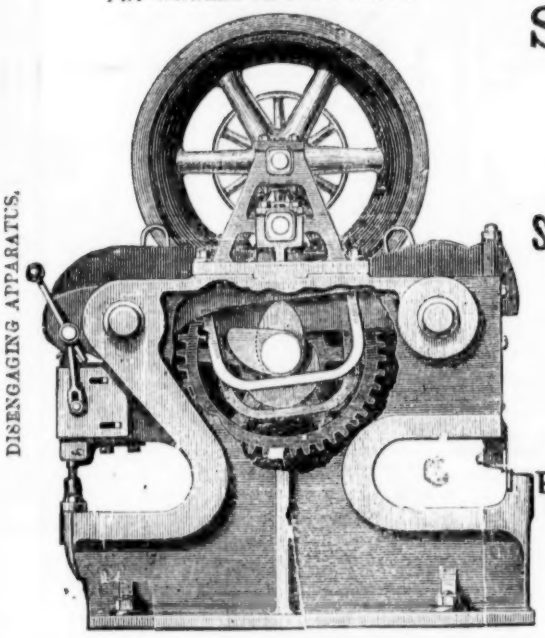

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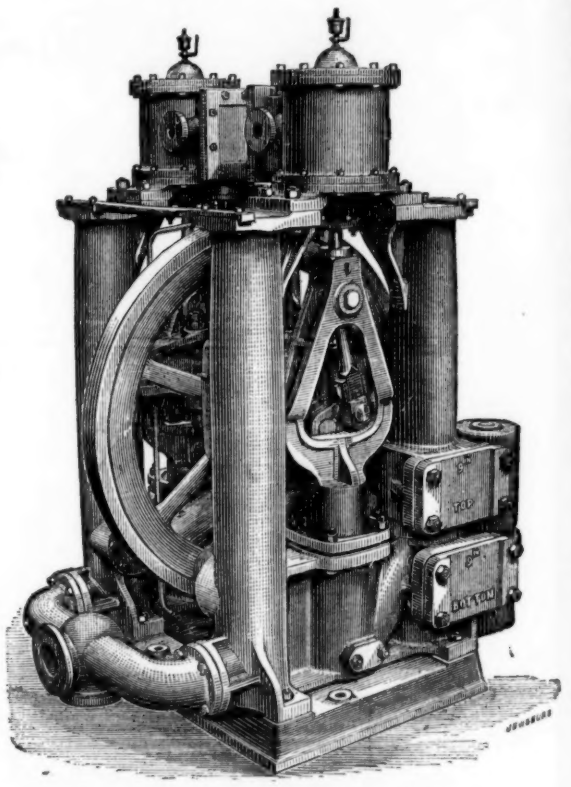

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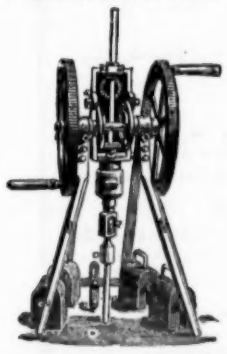

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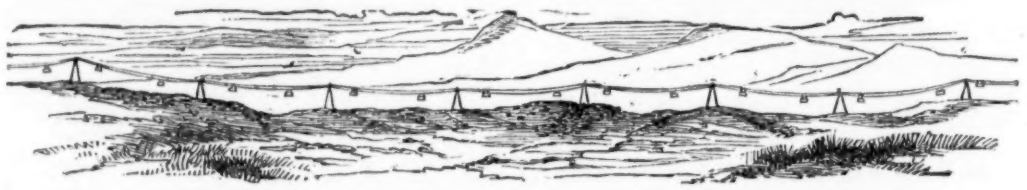

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